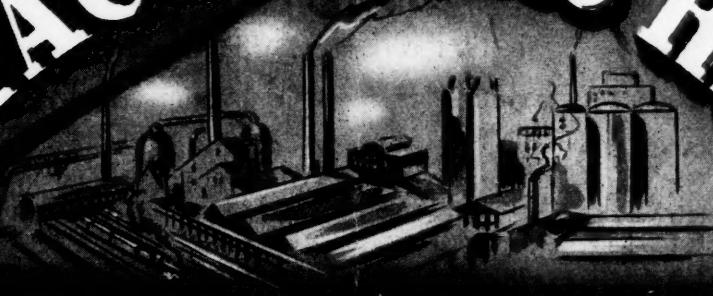


# MANUFACTURERS RECORD



REFERENCE  
DO NOT LOAN



**Let us have faith that right makes might, and in  
that faith, let us to the end, dare to do our duty  
as we understand it.**

—ABRAHAM LINCOLN.

# STACKS



September, 1944

## TODAY—

Our entire organization is concentrating upon speeding Victory in the construction of Bombs, Ship Sections and other essential war production.

## WHEN PEACE COMES—

Our enlarged facilities and our added personnel, will be better prepared to serve you than ever before.

This modern plant was financed entirely with company funds, without cost to the Government.

**BARS — SHAPES — STRUCTURALS  
PLATES and SHEETS**

*Any Quantity—Immediate Delivery from our Warehouse at 903 Third Avenue*

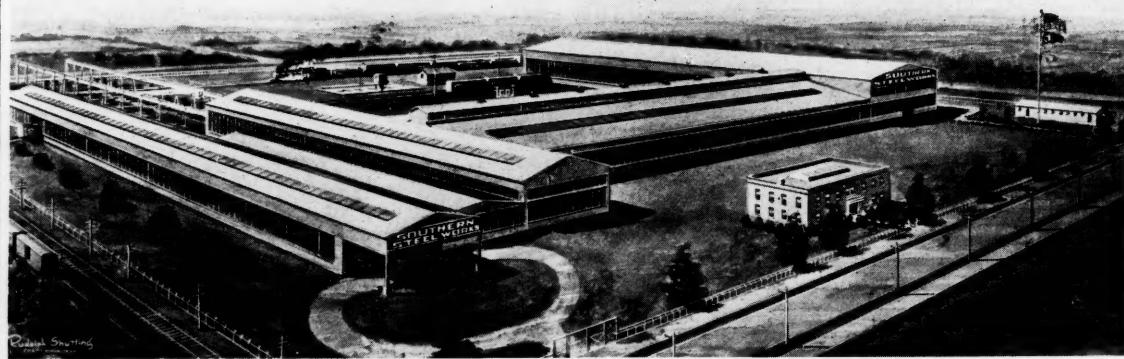
## SOUTHERN STEEL WORKS

KIRKMAN O'NEAL, *President*

745 NORTH 41st STREET

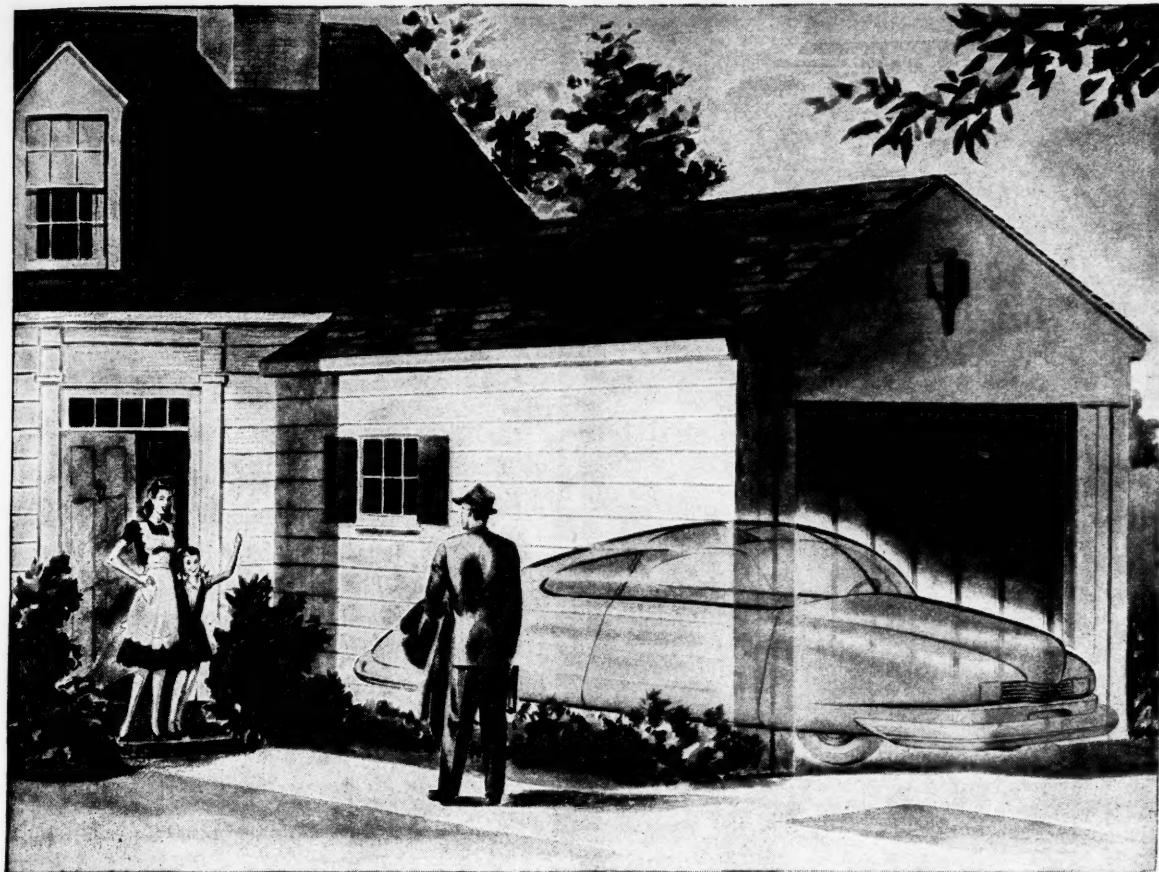


BIRMINGHAM, ALABAMA



SEPT

XUM



## There'll Be No Car in This Garage . . . UNLESS

A typical American family lives here.

There are hundreds like them—right in your city.

They are families that will not be able to buy new cars when this war is over.

They won't have the money—unless—you start your city's postwar planning—now!

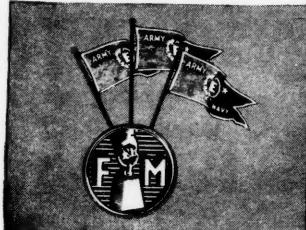
You can reduce or eliminate the heavy

burden of postwar municipal taxes with the profits a Fairbanks-Morse Diesel Light & Power Plant can make for your city.

Plan now! See to it that your municipality is *first* when deliveries are resumed.

For further information write Fairbanks, Morse & Co., Fairbanks-Morse Building, Chicago 5, Illinois.

**BUY WAR BONDS**



# FAIRBANKS - MORSE

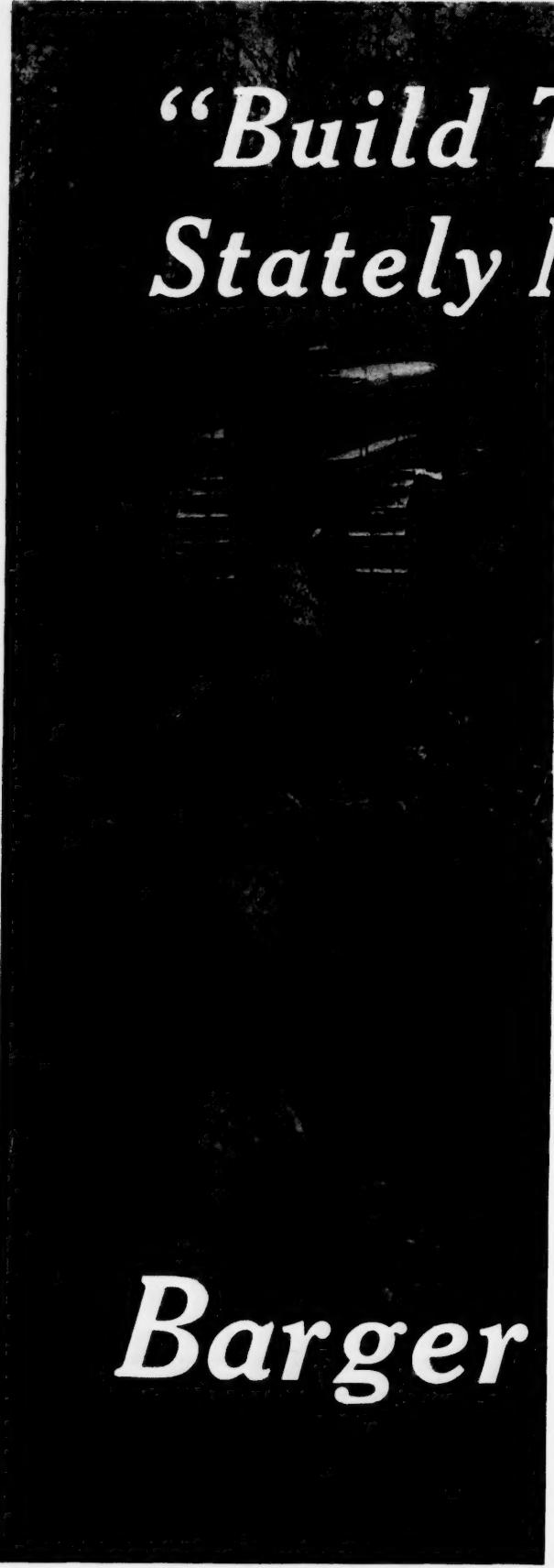
DIESEL ENGINES      WATER SYSTEMS  
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MOTORS      STOKERS  
GENERATORS      FARM EQUIPMENT  
RAILROAD EQUIPMENT



# Diesels

# *"Build Thee More Stately Mansions"*

. . . Oliver Wendell Holmes



When peace comes, lumber will be ready to do its versatile and goodly part in reconstruction. The stately mansions of the poets, the functional factories of the hardheaded industrialists, will be built of lumber; from the forests will come the spokes in the wheels of progress. Lumber will ably meet many needs in the progressive role assigned it.

Just now, the South's lumber is doing a magnificent wartime job. PT boats of wood, tent stakes and packing cases of wood—it is a Quartermaster's favorite, doing its part.

While there is little lumber for civilian needs at present, billions of dollars are accumulating for post-war improvements; and many of the plans being laid demand wood as best suited to the task. Lumber will be man's resourceful ally in bringing about the better world of and for which he dreams and fights.

# *Barger Lumber*

P. M. Barger Lumber Co.  
Statesville, N. C. and Washington, D. C.

Barger Millwork Company  
Statesville, N. C.

MANUFACTURERS RECORD FOR

# MANUFACTURERS RECORD

ESTABLISHED 1882

*A Publication for Executives*

Volume 113 SEPTEMBER, 1944 Number 9

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## Coated Glass Fabrics Have Many Indicated Uses

Properties and current applications of the first commercially available fiberglass fabrics coated on one or both sides with synthetic rubbers or resins indicate a wide field of use for these materials, according to Owens-Corning Fiberglas Corporation, manufacturer of glass fabrics.

Coatings employed to date are Neoprene, Koroseal, and Vinyl resins. Application of a properly selected coating to the glass fabric results in a material with high dimensional stability and tear strength, and substantially increased flexing resistance. Uncoated glass fabrics are not recommended for applications involving continuous or severe flexing, but experience to date with some of the coated fabrics indicates that they may be used satisfactorily under flexing conditions that would destroy an uncoated fabric by internal abrasion.

## Experimental Weaves

In addition to the all-glass fabrics to which coatings have been applied, experimental weaves have been developed using fiberglass yarns for the warp and cotton yarns for the fill. The purpose of the glass-cotton combination is to provide high strength in one direction, with the glass taking the load and the cotton holding the glass yarns in position.

By using such a fabric as reinforcement for plastic laminates, with each layer of cloth laid crosswise to the preceding layer, laminates that are equally strong in both directions can be fabricated. A similar application may find value in coated fabrics where maximum tensile strength is sought.

## Glass-Asbestos Cloths

Combination glass and asbestos cloths are now commercially available in limited quantities and may prove suitable as a base for coated fabrics. However, their properties as coated fabrics have not been explored. Fundamentally, glass-asbestos fabrics combine the strength of glass yarns with the bulk, felting properties and flex resistance of asbestos yarns.

Present uses of all-glass coated fabrics include aircraft battery covers, zippered boots for tanks, oil pressure switch diaphragms, aircraft tape for expansion joints of hot air ducts, protective aprons for workers in chemical plants. Resistance to heat, acids or oils is an important factor in these applications.

Suggested future uses include tents for the armed forces, water and gasoline tanks and bags, delousing bags, aircraft engine covers, pressurized bags for metal bonding, carburetor diaphragms, weatherproof containers for delicate machinery and instruments.



## *Only* NON-FERROUS AND STAINLESS FASTENINGS

WHEN you have a toothache you go to a dentist.  
When you need legal advice you go to a lawyer.  
Both men are specialists.

By the same token . . . when you need non-ferrous and stainless fastenings come to the house that specializes on them . . . Come to the Harper Organization which is concerned exclusively with the manufacture of bolts, nuts, screws, washers, rivets and specials of Brass, Copper, Naval Bronze, Silicon Bronze, Monel and Stainless . . . an organization not concerned with common steel.

This specialization brings refinements in product quality and "extras" in service to customers that are most rare. Start these "extras" your way by writing on your company letterhead for a complimentary copy of a 4 color, 104 page catalog and reference book.

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## Little Grains of Sand

*"Little drops of water, little grains of sand,  
Make the mighty ocean, and the pleasant land."*

Familiar terms are often misused. As a glaring example, take this well-worn one: "the labor movement." If precise usage is desired, one should say "the union movement." There is much difference. "The union movement" involves using the laboring man in a greedy grasping for power and pelf by a few top-flight schemers and their numerous hangers-on of descending wiliness. "The labor movement" looks toward the betterment of the begrimed fellow with the callouses. The two are often confused.

If reports are true that the War Labor Board will recommend the abandonment of the Little Steel formula to the President, such action will place the problem of inflation squarely in the President's lap.

It is to be hoped that he will make his decision as President of the United States and not as a political candidate for reelection nor as Commander-in-Chief. It has always been hard—we might say next to impossible—for this administration to refuse the demands of organized labor. It should be equally hard for the Commander-in-Chief to grant favors to others that are withheld from men under his command.

As in the past the solution of the dilemma will probably be found in either temporizing or in procrastination until after election.

History repeats itself because human nature changes, if at all, so slowly that the actions of mankind, a recital of which constitutes history, were the same in Adam's time as today. Adam promised Eve the apple, Marc Anthony assured Cleopatra the world and heaven only knows what the PAC has been promised.

A few among the many expressions by former great men are verification enough of this changelessness of *homo sapiens*.

"There is nothing," warned Goethe, "more terrifying than ignorance in action." He was speaking of his day and could not have foreseen the prelude to Pearl Harbor.

Nor could Landor have anticipated our Government by Executive Orders when he wrote, "Despotism sits nowhere so secure as under the effigy and ensigns of freedom."

When Edmund Burke commented that the people never give up their liberties but under some delusion, he could not have known that the CIO members would relinquish their right to vote as each saw fit to Sidney Hillman.

Thinkers of the past, speaking of the human nature of their particular days, are also delineators of today.

(Continued on page 8)

MANUFACTURERS RECORD FOR

DISCHARGE PRESSURE PSI

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SEPT

You can use this  
improved Romec Pump if...



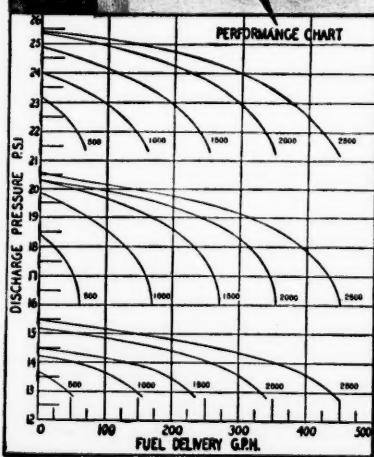
CAPACITY

400 gal. per hr. at 2500 rpm.

6 to 35 lbs. pressure  
per sq. in.

Weight only 2½ lbs.

Balance type relief valve  
with shaft seals.



If you can use higher fluid pressure you can save time. This pump has a capacity of 400 gal. per hr. at 2500 rpm. Suppose you save only 2 man-hours a day per pump; that means a saving of from \$40 to \$60 a month.

Higher pressure range may also help you. This G-9 runs from 6 to 35 lbs. per square inch. Furthermore it weighs less—only 2½ lbs. Its balanced type relief valve with shaft seals are dependable through extreme ranges of temperature. A precision built pump noted for its unfailing dependability, but only one of many in the ROMEC line. In writing kindly tell us about your requirements so we can advise you on the model best suited to your needs.

**ROMEC PUMP COMPANY**  
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**Romec**  
NON-PULSATING  
PUMPS... ACCESSORIES

(Continued from page 6)

# Georgia\*

## GEARED FOR ACTION



TEXTILES



COTTON



FARM CROPS



LIVESTOCK



MANUFACTURING



TIMBER



TOBACCO



MAN-POWER



MATERIALS



*\*This is one of a series of advertisements featuring the six States served by the Seaboard Railway.*

**G**eorgia—largest state east of the Mississippi—has made tremendous strides in the past two decades. Raw materials abounding in almost incredible abundance and variety, combined with unusually favorable conditions for manufacture, have resulted in the investment of millions in Georgia industry. In agriculture, diversification is the order of the day, and Georgia takes high rank in the production of a wide variety of farm crops, in dairying, poultry raising, livestock and in the growing of fruits and vegetables.

Today, Georgia's farms and factories are contributing in fullest measure to the winning of the war. Georgia is geared for action! Looking to the future, an alert State and its people are planning for even greater things to come.

The Seaboard Railway has played a vitally important role in Georgia's onward march of progress. With coordination inspired by a common cause, the Seaboard will continue to work with Georgia in the building of a greater and more prosperous State in the years ahead. *Seaboard Railway, Norfolk 10, Virginia.*



"How can you expect these millions of people in the United States who must be the citizens of tomorrow and the citizens of today—how can you expect them to be able to guide the destiny of a great republic bottle-fed and rocked to sleep in the arms of a Federal bureaucracy?"—Mr. Sumners of Texas in the House of Representatives, August 30th.

Six labor leaders, with or without invitations, have just flown to France to "inspect" the war there. Clad in G.I. uniforms with leggings, tin hats, field jackets and fetching accessories, they conferred with General Eisenhower and later gave out with important statements, one of which revealed that the soldiers understood that "this strike talk is purely propaganda."

Eisenhower at the time had two other guests, Lieut. Generals Bradley and Lee. The Generals were comparatively unoccupied at the time, having only a war to look after, and probably appreciated having such personalities instead of munitions flown to them.

By no means all of the veterans of World War II will join either of the two existing ex-servicemen's organizations although both the Veterans of Foreign Wars and the American Legion are vying with each other for their membership.

Global War Vets, an organization originating in Tennessee is one new group anxious to push its membership drive. It has its own official propaganda organ, *The Global Item*. Another is a Military Order of the Liberty Bell started by enthusiasts in the southwest.

The majority rules but it may not always be right. Everyone, except a comparative few, thinks the Japs will be push-overs once Germany is eliminated from the war. The few dissenters are only those who have been over there fighting the Nips.

Our budget will never be balanced until the White House economists take a course in elementary physics. The way to achieve a true balance is not to prop up the sagging side but to have an equal weight on each side of the fulcrum.

Labor union management has been known to place its spies in the plants and offices of business where access is gained to confidential information. There is nothing to prevent it from buying stock in a company and enjoying a stockholders right to look at the books. It also demands a voice in business management.

Business management, on the other hand must not interfere with unions in any way whatsoever. Any such interference, no matter how minor or well in-

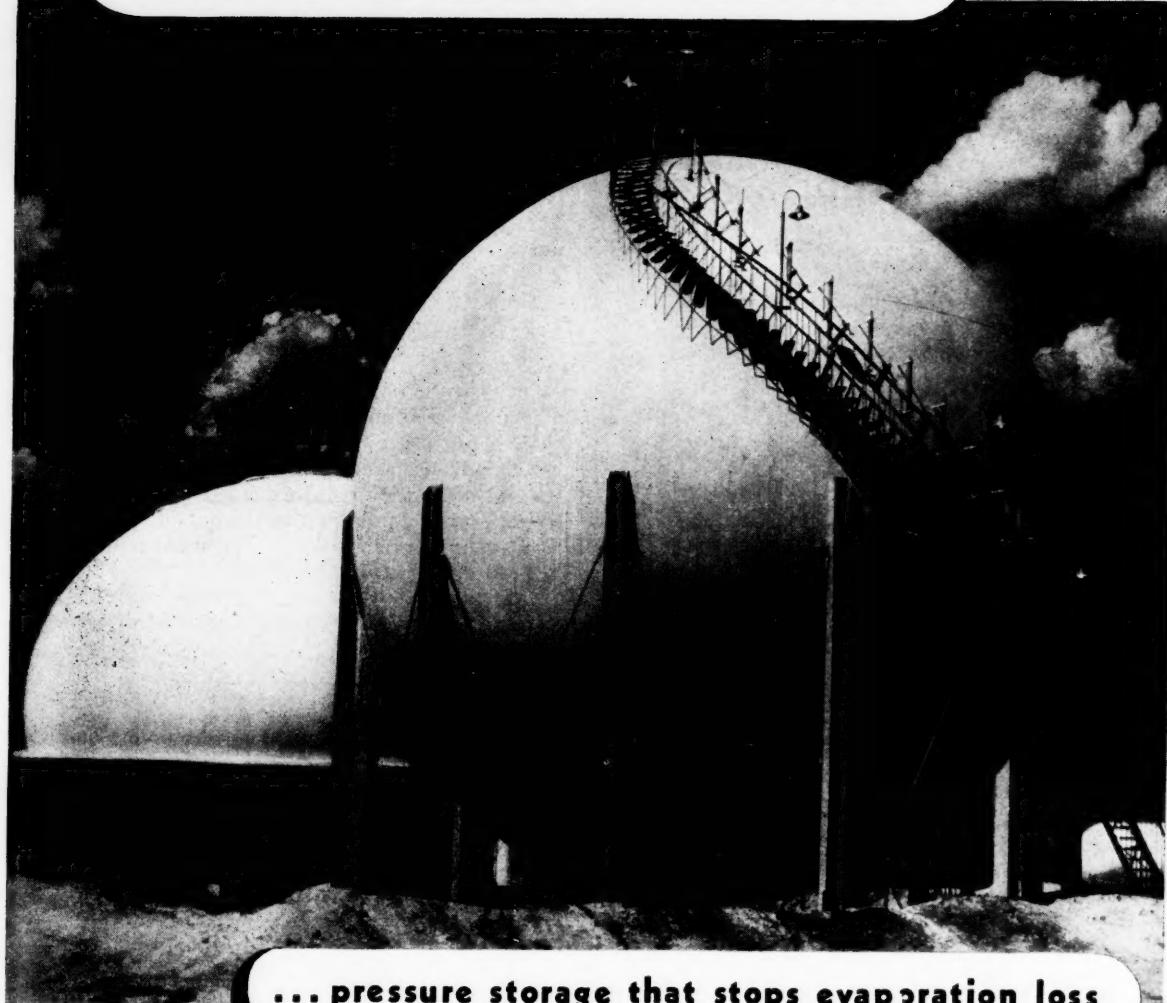
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MANUFACTURERS RECORD FOR

SEPT

XUM

# HORTONSpheres



... pressure storage that stops evaporation loss

**B**ECAUSE Hortonspheres not only stop evaporation loss but also protect the inherent quality of the product stored, industry utilizes these pressure vessels to solve countless storage problems. Hortonspheres are designed to withstand pressures built up in the vapor space at normal temperatures without venting. They prevent filling and emptying losses (after first filling) as well as standing storage losses. As the contents are withdrawn, sufficient liquid vaporizes to keep the space above the liquid filled which prevents air from being

drawn in at the vents. As the sphere is filled this vapor recondenses, hence no vapor is vented out of the tank and no vapor loss occurs.

The Hortonsphere shown above is used for the storage of butadiene. It is located at the Plains Plant, which is owned by the Defense Plant Corporation and leased to the Phillips Petroleum Company, who operate it for the Rubber Reserve Company.

*Hortonspheres are built in capacities of 1,000 to 20,000 bbls. for pressures from 20 to 100 lbs. per sq. in.*

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Houston 1 ..... 5614 Clinton Drive  
Tulsa 3 ..... 1611 Hunt Building  
New York 6 ..... 3313-165 Broadway Building  
Cleveland 15 ..... 2216 Guildhall Building

Plants in BIRMINGHAM, CHICAGO



Chicago 4 ..... 2106 McCormick Building  
San Francisco 5 ..... 1040 Rialto Building  
Philadelphia 3 ..... 1619-1700 Walnut Street Building  
Havana ..... 402 Edificio Abreu  
Washington 5 ..... 330 Bowen Building  
**and GREENVILLE, PENNSYLVANIA**

SEPTEMBER NINETEEN FORTY-FOUR

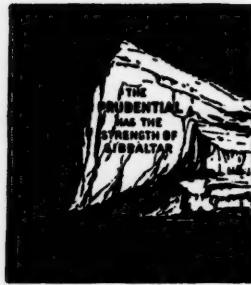
(Continued from page 8)

tended is classed as "company domination." Secrecy of a union's books and records is maintained as inviolate.

## THE AVERAGE MAN GETS A BREAK

**It was not until life insurance and actuarial science came that the man of moderate income found the answer to a want as old as civilization -- a way within his means to protect his family in the event of his early death.**

**Our representative can show you how much can be provided for so little.**



**The PRUDENTIAL**  
**INSURANCE COMPANY OF AMERICA**  
A mutual life insurance company  
HOME OFFICE NEWARK, NEW JERSEY

Thanks to the intricate workings of American politics all of China's casualties have not been Chinese. There is the case of Mr. Wallace, and it is not assured that Mr. Nelson will survive.

"Statistics will prove that the colored people of the South own more property, operate more business, own more farms and have built more institutions than those of any other section of the United States. Much of this advancement has been made possible through the aid of Southern white friends and we would be ungrateful if we did not let the outside public know about these contributions . . . the race problem is not as bad as it is worked up to be."

—Floyd Brown, Negro president of the Fargo (Ark.) Agricultural School.

For the past two years, highway policy has been the child of military need, it is pointed out by Sidney J. Williams, general manager of the National Safety Council. The results are only too familiar—new construction cut almost to zero; planning, design, maintenance, policing, driver licensing, and public educational work sadly hampered by personnel losses if not by reduced budgets.

A lady with a summer cottage at a wilderness resort paid the accepted price of a half dollar to an Indian for a pail full of blueberries. But one day he suddenly grunted in protest and hiked the price to a dollar.

"Why?" she asked, taken aback.

"Heap big war some place," was the laconic reason given.

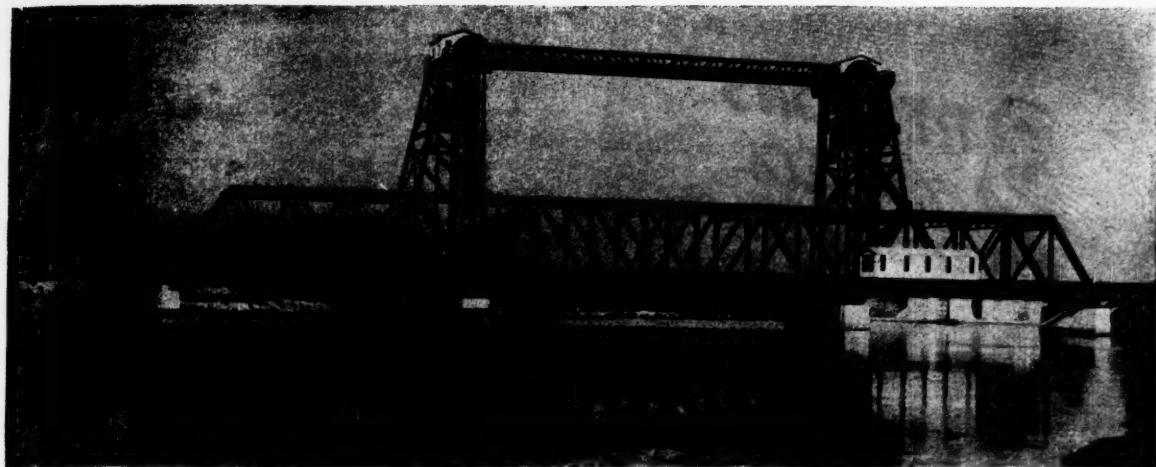
" . . . not all "Indians" trade in blueberries either."

On the whole, wartime traffic problems have been met with patriotic energy and with characteristic American ingenuity. We might have done much worse—but we need to do much better. The degree of "conservation" which we have achieved would still seem reckless extravagance to our allies.

The Joint Congressional Economy Committee, considerably and justly irked, has recommended prompt

(Continued on page 12)

MANUFACTURERS RECORD FOR



A. C. L. Ry. bridge over tail race of Santee Cooper Dam, near Monck's Corner, S. C., 164-ft. vertical lift span, two 62-ft. dk. pl. gdr. spans, two 120-ft. flanking spans

## The Best Bridge for the Crossing

There's a "best" bridge for every crossing, depending on many factors the bridge engineer must take into account.

The double-track lift span bridge shown above carries the main line tracks of the A. C. L. Ry. over the tail race of Santee Cooper Dam, near Monck's Corner, S. C. It is economically adapted to heavy rail traffic over this navigable waterway requiring a long movable span.



1,330-ft. high-level continuous deck girder bridge over Black Warrior River, near Tuscaloosa, Ala.

To replace the old steel truss swing-span bridge over Black Warrior River, near Tuscaloosa, Ala., the high-level continuous deck girder design shown below at left was adopted as best suited to prevailing physical and economic conditions.

Pleasing appearance and unobstructed view of the motorist, economy in fabrication and erection, low maintenance cost, straight approaches, length of channel span and height above low-water level to clear river traffic, were some of the features influencing its use.

Today Virginia Bridge is fabricating steel bridges of varied and unusual designs to meet the needs of our armed forces at home and abroad. But we are also prepared to cooperate in planning and estimating the peacetime bridges of tomorrow.

### STEEL STRUCTURES ALL TYPES



## Virginia Bridge Company

Roanoke

Birmingham

Memphis

New York

Atlanta

Dallas

UNITED STATES STEEL

(Continued from page 10)



## APS PLASTEEL ROOFING

### 1 ALL THE ADVANTAGES OF STEEL Light, strong, rigid, easily handled.

### 2 PLUS WEATHER-TESTED COMPOUND Resists extremes of weather, moisture, acid fumes, salt-air corrosion, etc.

### 3 PLUS EXTERIOR MICA COAT Ornaments and adds protection. Attractive silver-gray finish needs no upkeep, no painting!

All these advantages—and more—are yours if you use APS PLASTEEL Roofing and Siding. Available for immediate shipments in standard corrugations for industrial as well as farm use.

## PROTECTED STEEL PRODUCTS

General Office and Plant,  
**WASHINGTON, PA.**

action to make Government corporations subject to closer control by Congress. It is newsworthy largely because Congress has taken so much so long without fighting back. Federal Corporation officials, the impudent children of an indulgent Administration papa, have been treating Congress, the policy-making body, chosen by the people, like a pediculous cousin from Shantytown.

Government payments to farmers for the year 1943 were \$24,668,000 less than in 1942, or \$672,080,000. Analysis of the payments by states shows that payments to farmers of the 16 southern states dropped \$39,389,000 whereas in the other 32 states total payments increased \$14,721,000.

Many government officials explain it in as many different ways. Southern farmers still find resounding explanations hard to cash.

"Well done is better than well said."

—Benjamin Franklin.

Washington reports all point to the fact that when the Germans are brought to heel the United States will have so much food on hand that its learned officials just won't know what to do with it. Is it possible that we are going to see a repetition of the "little pig" episode?

According to Mr. C. McD. Davis, President of the Atlantic Coast Line: "New industries did not just happen or come merely through military or political expediency, but developed because of the South's natural resources, urbane climate, intelligent population, and above all, the South's visionary, and at same time practical, industrial leadership, composed of men who have for some time realized what diversification of effort will mean to the future of the South, and what industrial production can mean in greatly increased income and desire for wider opportunity."

Characterizing the output of heavy, four-engine bombers as "remarkable" the War Production Board has announced that approximately 11,000 such planes have been produced during the first eight months of this year.

In making its announcement WPB has torn aside the veil of secrecy that has shielded this colossal production picture and further reveals that more than 1300 big bombers were completed in January and that this rate has been maintained ever since.



## COMFORT CONTROL FOR ALL DEPARTMENTS

From executive offices to shop space, temperature requirements vary widely. That is why Johnson Comfort Control . . . with a thermostat in each department . . . means *real* comfort that promotes good health and increases efficiency. Set the thermostat in each department at the desired temperature and that temperature will be maintained despite wind, direct sunshine and other weather conditions which often upset the "averaging" effect of a centrally located thermostat.

When comfortable working conditions prevail there is less loss of time due to colds and fatigue. Fuel is conserved, too, for there is no

waste in overheating some rooms or departments. Comfort Control, pioneered by Johnson nearly 60 years ago . . . and with the numerous refinements made by Johnson engineers through the years since then . . . meets many of today's modern comfort requirements more effectively than any other type of temperature regulation.

Johnson Comfort Control is adaptable to all types of buildings. If you would like to know more about its specific application to a particular modernization or new construction project, get in touch with the Johnson office nearest you. Direct branches are in all principal cities.

FOR VICTORY SOONER  
BUY MORE BONDS

# JOHNSON

*Automatic*

TEMPERATURE AND  
AIR CONDITIONING

*Control*



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## "I Figured We Needed More System"

Yes, system is good in any business. But being knee-deep in record forms just isn't the answer. What is needed here is not *more* system . . . but *better* system.

And there's where Uarco fits in. Why? Because Uarco records are more than just forms—rather they are functional business tools, scientifically designed to routinize complicated business procedure. They are continuous forms that end record keeping confusion . . . save time and trouble in every division of the business. There's no more copying and re-copying, with Uarco on the job... *one* person at *one* sitting writes enough copies for all departments.

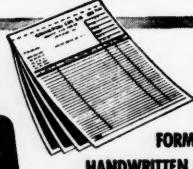
There are Uarco forms for all types of record keeping problems. They are designed for hand-written or machine-written use. These records may be carbon interleaved or non-interleaved, may be used in a Uarco Autographic Register, typewriter, billing machine or tabulating machine.

No matter what record keeping problem you may have, bring it to Uarco. There is a form, or Uarco will devise one, to fit your need. It will cost you nothing to call the Uarco representative today.

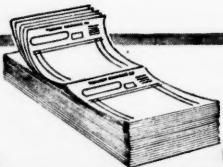
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Chicago, Cleveland, Oakland • Offices in All Principal Cities



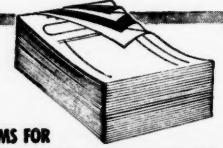
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FORMS FOR  
HANDWRITTEN RECORDS



FORMS FOR  
TYPED RECORDS



FORMS FOR  
BUSINESS MACHINE RECORDS

**UARCO**

**BETTER BUSINESS RECORDS**



OFFICIAL U. S.  
NAVY PHOTO

**INDUSTRY depends  
on efficient  
signals, too!**

**FARADAY**

**AUDIBLE ELECTRIC SIGNALS**



**CHIMES.** Easily installed heavy duty type with xylophone bar and resonator. UNI-PACT feature if desired. Clear, pleasant tone, advanced design, dependable under all conditions.



**SIRENS.** Motor-driven industrial type with penetrating shrillness; sturdy, dependable, weatherproof.



**AIR TRUMPETS.** The most powerful horn of its size on the market. Furnished in complete operating units ready for connecting to power circuits.

**Our complete line includes  
**SIGNAL EQUIPMENT**  
to meet your needs exactly**

Yesterday's signal equipment seldom meets today's needs. Tomorrow the picture may change again. Faraday industrial signals are abreast of the times. Their advanced design — the flexibility of the UNI-PACT feature—makes it possible for you to change signals in various parts of your plant, easily, quickly, without changing electrical connections—whenever noise conditions change.

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Getting right down to facts, you can't count a farm's yield by its acreage; a factory's output by its floor area, nor a water system's gallon capacity by its well diameter. It's the "pay off" in each that really counts.

It just so happens that Layne Well Water Systems have the very best "pay off" that engineering skill has yet achieved. For such efficiency there are many good, sound reasons. First and foremost is the sixty-two year record of constant endeavor in the well drilling and pump building field. Second is the meticulous care with which each system is built and installed, and third is Layne's unbroken policy of making no compromise with quality.

Many are the cities, factories, paper mills, chemical plants, packing houses, breweries, irrigation projects and mines who use Layne Well Water Systems almost exclusively. They all know that back of every Layne Well Water System there stands the largest, most widely experienced and constantly dependable ground water developing organization in the world.

If in a Well Water System it is the "pay off" in which you are interested, write for late literature. Address Layne & Bowler, Inc., General Offices, Memphis 8, Tennessee.

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## WELL WATER SYSTEMS DEEP WELL PUMPS

BUILDERS OF WELL WATER SYSTEMS FOR  
EVERY INDUSTRIAL AND MUNICIPAL NEED

## GIs To Study Business Ways

The soldier, instead of returning to peacetime pursuits rusty on his commercial three Rs, may show up better equipped to fill a more important job in the business world. The opportunity to so fit himself is to be, at least, offered him by the Army.

The Armed Forces Institute, which handles the Army's educational programs, is sponsoring a project to compile instructive and comprehensive text books on business management, ranging over 20 diverse fields from beauty parlors to metal-working shops.

The texts as outlined but not now completed and available will confine their matter to the operation of small business, the conduct of larger and more complex enterprises being prohibitive in scope. It is felt that a large proportion of returning servicemen may want to start their own businesses. An OWI report indicates that only 25 per cent of discharged soldiers are asking for their old jobs back again.

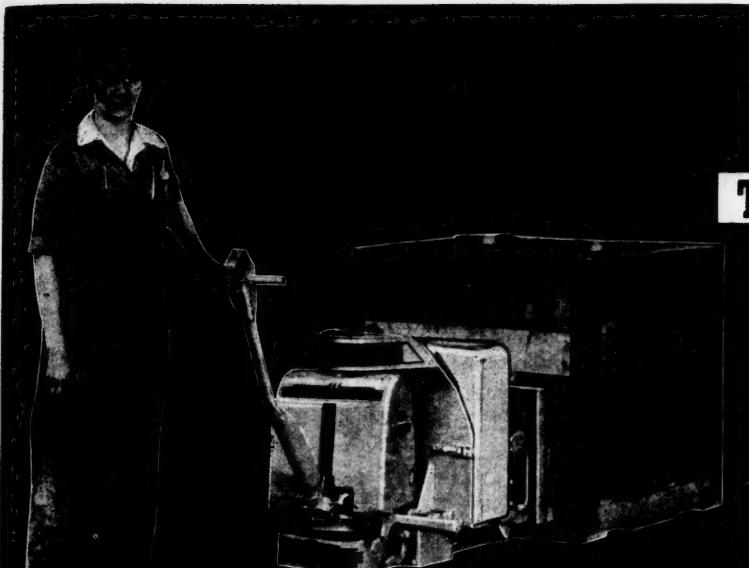
The books, while small and compact for convenient use even in the field, will be as complete as many informed hands can make them. Aiding the Armed Forces Institute is the Commerce Department's Bureau of Foreign and Domestic Commerce and many trade associations and trade papers in the various fields. These cooperating groups will supply the material, review the finished manuscripts and make improving suggestions in order that the books may be as comprehensive in regard to little business as they can be made.

The Commerce Department has had its worries about the high mortality rate among smaller business outfits. In the two years from Pearl Harbor to Jan. 1, 1944, more than one million firms closed shop. This was 30 per cent of the total number doing business. Only 572,000 new businesses were started during this period. The Department hopes, and by participating in the preparation of the text books is encouraging its hopes, that returning servicemen will instill fresh vigor into the small business world.

The texts, which should be ready for distribution late in the year and easy for an ambitious soldier to secure, cover these fields; metal-working shops, saw-mills, painting contractors, electrical appliance stores, grocery stores, restaurants, dry cleaning establishments, shoe repair shops, filling stations, laundries, hardware stores, auto repair shops, real estate and insurance, heating and plumbing, apparel stores, beauty parlors, variety and general merchandise stores, bakery stores and drug stores.

In as much as the many helping hands might make them, the texts will cover every situation likely to confront a discharged soldier who ventures into any of the named fields on his own hook. The chapter headings run from bookkeeping to buying stocks or deterioration of neighborhoods.

The business man now prepared to put back to work his former employee who went off to war will likely find him better informed and able—or he may find him independently preferring to set up his own saw mill or shoe repair shop.



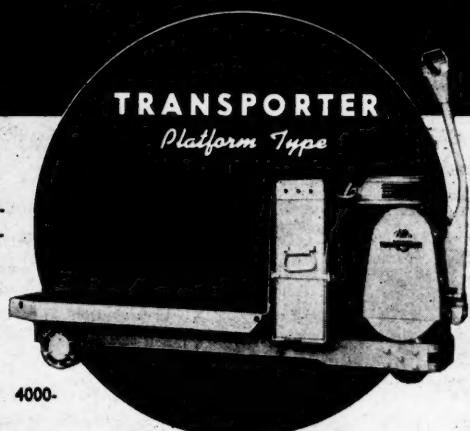
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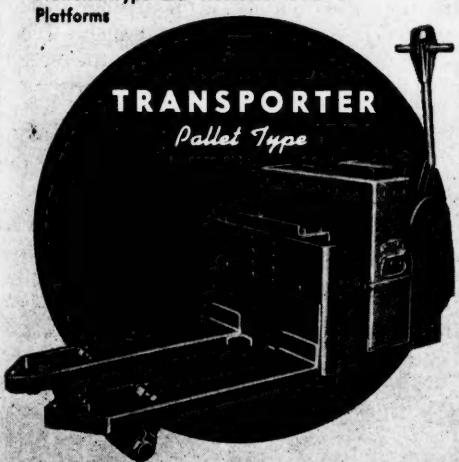
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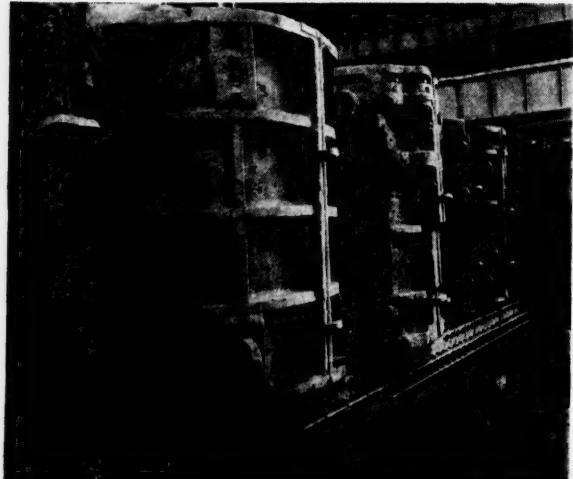
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## "Miracle" In The British Isles

Within the past few weeks the farmers of the United States have received well-merited praise for their response to the wartime appeal for increased production. Bumper crops of wheat, corn and other foodstuffs are prophesied for 1944. Emphasis is given to the fact that acreage planted is 355,000,000, two per cent more than last year and the largest since 1932. It shows a six per cent increase over the 1930-40 average.

Now if that is good—and agricultural authorities say it is—consider in comparison the accomplishments of the British farmers during the present war. They have increased their tilled acreage from 12,000,000 to 19,000,000, an increase of fifty-eight per cent. They have increased the net output of the soil seventy per cent. Before the war, Britain raised at home one ton of food out of every three eaten; since the war began it has produced two tons out of every three eaten,—and Britons are not starving.

The British farmers' astonishing production, sometimes described as a "miracle," was accomplished in spite of the fact that since the beginning of the war, 40,000 skilled men have been lost to agriculture resulting in the fact that today there are actually fewer men on the farms than in 1939; that many thousand acres have been converted into airfields and other defense installations, and that many farms have been worked under enemy fire. In one English county, for example, 70,000 bombs fell on the farms in the course of six months. Our farmers are considered to have done well to keep production above the pre-war average; the British farmers have almost doubled theirs.

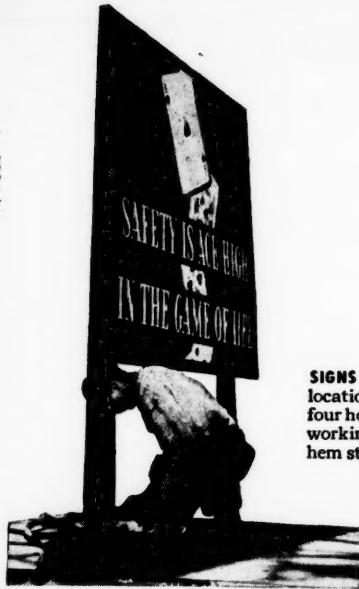
When this war began, Britain was ill prepared to meet the immediate menace of the submarine and avoid starvation. Fortunately, a farm program had been formulated in anticipation of just such a crisis and it was instantly put into effect. It contained regulations just about as drastic as any that might have been devised by the dictator of a totalitarian government. The difference lay in the fact that it was administered by local committees made up largely of the farmers themselves.

One among other reasons for the success of the farm program, one in which there is a lesson for us, lies in the quality of the English soil. Good farming methods are traced back to the days of the Anglo-Saxons and because of these methods little soil has been lost through erosion and so it has remained fertile. Its idleness in pasture between the two wars and its general use for cattle grazing, also increased its fertility.

The question now is whether, when the crisis has passed, Britain will let her farms go once more into decline. Twice in the present century she has been threatened with starvation through having her food supply from abroad cut off by the enemy. She may hesitate to take that risk again.

—Francis F. Beirne, Baltimore Evening Sun.

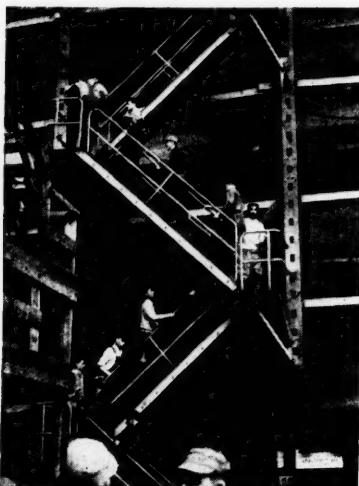
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**SAFETY CAP**, worn by many women employees, is made of light, cool cotton, with snood covering hair. Visor shades eyes, and serves as a bumper to warn wearer in case her head approaches too close to work.

## MEN AGAINST MISHAP

**SIGNS LIKE THIS**, at strategic locations, are helping twenty-four hours a day to promote safe working practices in Bethlehem steel plants and shipyards.



**STAIRWAYS FOR SHIPBUILDERS**, in a Bethlehem yard, take the place of long side-shell ladders. Traffic is one-way, and employees may carry small tools and materials, dangerous on an ordinary ladder.

**SAFETY INSTRUCTION.** Bethlehem employees doing specialized work and using protective respiratory equipment are trained by safety supervisors with many years of experience.



Steel, Manufacturing and Fabricating Plants at... Bethlehem, Steelton, Williamsport, Johnstown, Lebanon, Pittston, Rankin, Leetsdale, Pa., Buffalo, Lackawanna, N. Y., Sparrows Point, Md., Chicago, Ill., Tulsa, Okla., Corsicana, Tex., South San Francisco, Los Angeles, Alameda, Calif., Seattle, Wash. Shipbuilding and Ship Repair Yards... Quincy, Hingham, East Boston, Mass., Staten Island, Brooklyn, N. Y., Hoboken, N. J., Baltimore, Fairfield, Sparrows Point, Md., San Francisco, Alameda, San Pedro, Calif.

**I**N Bethlehem steel plants and shipyards, there's a never-ending battle being fought—a campaign against that wily old tactician, General Mishap. The general is wise in the ways of human frailty, and a master of feints, flanking maneuvers and ambuscades. The results of his forays can be serious indeed. Industrial accidents are deplorable any time and anywhere, but in wartime they are, in addition, an effective saboteur of vital production.

Ever since the war emergency developed, and thousands of men and women, without experience in industrial work, began to enter its plants and shipyards, Bethlehem has been redoubling its efforts toward employee safety. Physically, by means of new safety devices, and more protective clothing, safety shoes, goggles, helmets, and the like. Educationally, by a stepped-up program of safety meetings and first-aid instruction, bolstered by signs, posters and warning flags, lectures, booklets and motion pictures.

The safe way of doing his job is impressed upon the new Bethlehem employee from his first day of work. And safe working practices and the avoidance of hazards are continually emphasized to newcomers and veteran workers alike.

Thanks to the unceasing effort to make safer workers and safer working conditions, even during this wartime era of peak production and the largest working force in Bethlehem history, our safety standards have steadily risen.

Significant of what has been accomplished in making war work safer for the worker is this encouraging fact: statistics show that *the Bethlehem worker runs less danger of being injured while at work in the plant, than during his spare time when he is off the job.*

### WORLD'S LARGEST SHIPBUILDER

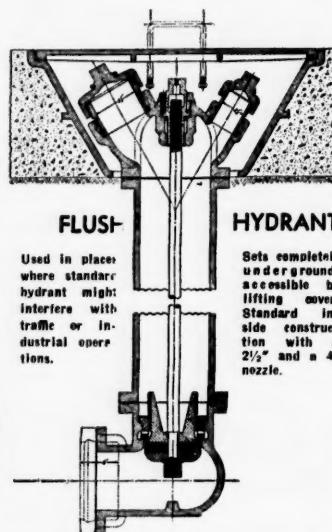


### SECOND LARGEST STEEL PRODUCER



## BLUE PRINT NOW! VALVES, HYDRANTS AND PIPE LINE ACCESSORIES

There is need now of "facing the problems of peace in advance of victory." We are glad to cooperate by furnishing data and information so that you may incorporate M&H Valves and Hydrants in your specifications for postwar factory changes and improvements. Blueprint now and be ready.



**M & H GATE VALVES** are cast iron body, bronze mounted, with double-disc parallel seat or solid wedge top, non-rising stem or outside screw yoke. They come either with flanged or screwed connections. Valves for fire protection lines are marked "UA-FM" to denote approval of both the Underwriters and the Factory mutuals.

**M & H FIRE HYDRANTS** are revolving head, dry top, bronze mounted. They also are approved by "UA-FM". Entire main valve assembly is removable through barrel without digging. Special Traffic Model is fitted with breakable bolts and stem coupling, designed to break at ground line under impact. Repairs are made simply by renewing bolts and coupling, without shutting off the water.

### M & H PRODUCTS INCLUDE

FIRE HYDRANTS	SHEAR GATES
GATE VALVES	MUD VALVES
TAPPING VALVES	VALVE BOXES
WALL CASTINGS	FLAP VALVES
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TAPPING SLEEVES	FLANGE AND
CHECK VALVES	FLARE FITTINGS
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EXTENSION STEMS	B & S FITTINGS
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## Houses For Sale

There has been much talk of what to do and how to do it, about disposing of housing built by the government with public funds during this war. Some argue this, others contend something else, few seem to know there already is a perfectly clear law setting forth the answers as Congress saw them.

This law is the Lanham Act of 1940. It directs (1) that housing considered "permanent" shall be sold to private buyers "as expeditiously as possible" after the war emergency shall have been declared at an end by the President; (2) temporary housing at war plants, military installations and other locations active only for the duration of the emergency shall be demolished "as promptly as may be practicable in the public interest within two years after hostilities cease," (3) demountable dwellings of permanent construction may be sold for demounting and re-assembly, (85,000 of this type have been erected, mostly on leased land), and (4) temporary dormitories on public lands shall be removed within two years after the emergency ends.

The National Housing Agency, completing plans to dispose of some one billion dollars worth of permanent housing, is giving the first chance for purchase to large buyers wanting whole projects. The \$3,605,000 Defense Homes Corporation project at Newport News, Va., was sold recently to an organized group of private buyers.

In disposing of a unit within a project or a portion of the project, preference will likely be given to present occupants or to war veterans. The units run from \$4,000 to \$10,000 in asking price. The "G.I. Bill of Rights," affording government-guaranteed loans up to \$2,000, is expected to stimulate sales of this kind to returning servicemen.

The estimated value of "temporary" construction erected during World War Two is \$800,000,000 and the Lanham Act directs that this be demolished and salvaged as much as possible. During the first World War 6,148 dwelling units of so-called permanent construction were built at a cost of \$110,000,000 by the United States Housing Corporation and the Emergency Fleet Corporation. A 1918 Congressional resolution directed their disposal to private purchasers at a fair market value without delay. Most of the units were sold on a 10 per cent cash and monthly amortization plan and uncompleted projects were junked.

Government-built housing of World War One depreciated rapidly in real value during the depression of the 1930's. It was no longer of much value when the 1940 housing shortage developed. Most of it had fallen into arrears for taxes and a considerable proportion of owners had simply walked off and left their properties which had ceased to have a marketable value.

Present directors of housing disposal have inherited what remains of the government housing still government owned from World War One to add to the man's size job caused by World War Two. It is to be hoped that it will not take twenty-six years to do it.



*"What Enriches the South Enriches the Nation"*

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## WHY CAMOUFLAGE TAXATION?

A corporation is a political nonentity. It can not vote. Any tax levied on a corporation is "taxation without representation."

A corporation income tax is not an income tax at all. It is a corporation profits tax. It is calculated on the difference between the corporation's receipts (income) and its expenditures. Do our lawmakers deliberately intend to mislead by calling such a tax an "income" tax or do they need a primary course in terminology? Surely they are not emulating the example of the chief executive who created by decree the FEPC — Fair Employment Practice Committee.

The executive is well known for his sense of humor. The Congress, with the possible exception of the German-born senior senator from New York, is not.

Because profits are the base on which so-called corporate income taxes are computed government receipts from this tax are at their lowest ebb in lean business years when government need for revenue is greatest. Government income from this source conceivably can fluctuate from zero to any figure within the scope of human imagination. It is inflationary because a corporation, in calculating the prices it will charge its customers, bases them on a fair net profit AFTER TAXES. In other words it passes on this tax to the public in the form of higher prices. These higher prices have no check save competition and all competition bears the same kind of tax. Higher prices for the same thing and inflation have an identical meaning.

A graduated income tax places the successful few at the mercy of the mass whose livelihood they make possible. It results in confiscation of personal property and will eventually lead to the destruction of all privately owned property by a government dominated by mob rule. Like most fables the one about the goose that laid the golden eggs has a very true moral.

A consumers' sales tax falls on all citizens—and

aliens enjoying the temporary hospitality of the nation—according to their willingness to spend or their desire to save and their ability to earn. Year in and year out its base is broader, firmer and less fluctuating than any known form of income tax. It is for just this reason that it is such a stiff dose for politicians to swallow. Politicians are prone to think of tax legislation in terms of votes not to be antagonized rather than of revenue to be raised. They apparently wish to lose as few votes as possible rather than raise as much revenue as possible in the fairest possible manner.

A consumers' sales tax is the surest way to bring home to every voter the fact that he has a stake in his government and that it is to his own personal advantage to see that it is run efficiently and economically.

It is a curb on inflation because it discourages an orgy of needless spending. As a result it encourages saving and personal saving is an important source from which the pool of the nation's capital sources is kept filled. When this pool is filled to overflowing we have prosperity, rising wages and salaries and cheap money. In other words it tends to increase the working capital of the nation and thus insures a continuity of progress towards a rising standard of living and an increasing national prosperity.

It is easily administered. Contrasted with the complexities of corporate and personal income tax computations and collections it is simplicity itself. Its collection is by no means as complicated, as annoying and time consuming as is the system of "ration stamps" now in force. If a national consumers' sales tax law was fairly and carefully drawn the present complex income tax laws and regulations could be greatly simplified or even done away with entirely.

A consumers' sales tax is practicable. Proof of this fact is that it is in operation in many of the states and IT WORKS.

## WAR WORKERS

So much gush has been spoken and mush has been written in praise of (and we quote from a resolution adopted at the annual convention of the "Kiwanis International") "—those who, by long hours of faithful and uninterrupted service, have continued to supply our armed forces with the implements and materials of war" that sensible people have been glutted to the point of nausea.

Why should a war worker, no matter how conscientiously he may perform his duties, be the object of special praise while praises for "the butcher, the baker and the candle stick maker," "the doctor, lawyer, merchant chief" remain unsung? All civilian workers who do their jobs and the jobs left vacant by service men and war workers and who maintain for them, and for all of us, the American Way of Life, are just as patriotic. Every man who fills his own small place and contributes to the preservation of the social order we are fighting for to the best of his ability deserves public encomiums just as much as does the war worker with the fat pay envelope.

When we think about the ordinary citizen who goes about his business and does it "unheralded and unsung" we must realize that without him our nation would fall apart like a house of cards. He is the brains and the bones, the flesh and the blood without which any nation becomes a wraith with no strength to support an army and navy or war workers. It would not even be able—heaven save the thought—to support its politicians.

We can understand why warworkers are being cajoled but we can not understand why they should be. They are being buttered with prepared propaganda to enhance the political and economic power of the mongrels who stampede them into the mental-mire of class consciousness. They should not be pampered. No American should be pampered now or at any time. He should be condemned if he does not do his duty as he sees it. He should be ashamed to know that his fellows look upon him as the teacher's pet singled out by government for special treatment.

## WHY ARE LAWS WRITTEN?

Austrian-born Supreme Court Justice Felix Frankfurter seems to have adapted German-born Albert Einstein's cosmic Theory of Relativity to the finite field of jurisprudence.

Professor Frankfurter's recent statement made in the course of a written Supreme Court decision is as follows: "The notion that, because the words of a statute are plain, its meaning also is plain, is merely pernicious oversimplification." In common, everyday language this means that a law does not mean what it specifically says; rather, it means what its administrator wants it to mean.

This interpretation of the meaning of the word law expressed from the bench of the highest court in the land destroys the power of all laws to protect the citizen from tyranny. It destroys the law making power of the Congress, composed of the direct representatives of the people by sanctioning the perversion of the enforcement of a law at the whim of any executive agency when that agency is aided and abetted by a subservient court.

It is the duty of every court, high or low, to decree what is justice under the law. It is not the duty of a court to distort the meaning of any law. If a law is unfair or unjust it is the duty of Congress to correct the unfairness or injustice in the law itself.

## TICKS AND BUREAUCRATS

A tick is a blood-sucking parasite that infests the skin of animals.

A bureaucrat is a power-sucking parasite that infests the body politic.

The similarity between what scientists call the behaviorism of ticks and bureaucrats is interesting even though this behaviorism will seem disgusting to most of us.

Both ticks and bureaucrats, being parasites, first fasten themselves on the body of their host. Then, in order to get a really firm hold they dig their heads in.

Since both are parasites they dig their heads in not only to insure the firmness and permanence of their positions but also in order to suck the blood that feeds them from the veins of their victims.

Ticks swell with the sustenance they suck from the veins of their host. So do bureaucrats.

It is said that ticks can gorge themselves to the point where they burst but, if this happens their heads remain imbedded. Bureaucrats expand in numbers and in individual physical appearance. Even their heads grow fat.

The elimination of one tick from one tormented body must be done thoroughly. If its head, though separated from the rest of its anatomy, remains imbedded a festering sore results. The bureaucrat's head, the idea that made him a bureaucrat, must be carefully removed at the same time that he passes into political oblivion.

They are both hard to get rid of. In their native habitat both ticks and bureaucrats thrive in numbers. They do not merely breed and multiply they seem to cube.

But most important comparison of all: if an infestation of ticks or bureaucrats remains unchecked it progressively changes from a source of annoyance by troublesome pests to a cause for a lingering and painful death.

# Mr. Hillman's Fantastic Proposal

## C.I.O. Scheme to Raise "Slush Funds" to Influence Coming Election May Injure Entire Labor Movement

*Guest editorial from LABOR, the official weekly Washington newspaper, owned by fifteen recognized standard railroad labor organizations.*

Sidney Hillman, president of the Amalgamated Clothing Workers, is chief director of the C. I. O.'s political activities. In order to comply with the provisions of the Smith-Connally bill, he proposes to operate through two committees, one made up of members of the C. I. O. and the other of citizens who sympathize with the C. I. O.'s objectives.

Mr. Hillman says that each of these committees will have a campaign fund of \$3,000,000. That's a total of \$6,000,000. In addition, he proposes to "freeze" what is left of a fund of \$700,000 raised to influence this year's primaries.

Never has any group in the labor movement attempted to raise such huge sums for political purposes. For example, the Standard Railroad Labor Organizations, which during the last 25 years have been more active in the political field than any other labor group, have never spent in any campaign as much as one-half of one per cent of the amount Mr. Hillman says he and his associates will throw into the 1944 campaign in order to re-elect Mr. Roosevelt and members of Congress approved by the C. I. O.

Parenthetically it might be pointed out that the C. I. O. "tests" for candidates are not trade union "yardsticks," and frequently emphasize issues of no direct concern to the working man.

As a consequence, candidates with good labor records are being vigorously and even viciously opposed by the C. I. O., while candidates with comparatively poor labor records are ardently approved by the C. I. O.

However, that is a comparatively minor issue. What concerns us at the moment is Mr. Hillman's proposal to raise great "slush funds" to carry the coming election.

Coupled with Mr. Hillman's open alliance with the Communists in New York state and elsewhere, we have a situation which is full of ominous possibilities for the entire labor movement.

No fair-minded American can question the right

of workers to organize for political purposes and to ardently support their friends and oppose their enemies.

However, if Mr. Hillman, or anyone else, imagines that a proposal to raise \$6,000,000 to control a presidential campaign will not cause the most serious repercussions from one end of this country to the other, he simply does not know the American people.

Inevitably Mr. Hillman's program will strengthen the hands of organized labor's foes and increase the demand for more rigid regulation of labor unions.

If only the C. I. O. were affected by such hostile popular reaction, we might shrug our shoulders and say, "It's none of our business." Unfortunately, while the great majority of trade unionists have no interest in or sympathy for Mr. Hillman's grandiose plan, the entire labor movement is likely to feel the sting of popular disapproval.

Mr. Hillman's alliance with the "Reds" is also a matter of moment to all trade unionists. For years A. F. of L. unions were plagued by Communist efforts to penetrate their ranks. These were successfully resisted, but only after long and bitter and costly struggles.

Now with the approval of the C. I. O., Mr. Hillman has thrown the doors wide open to the "Reds." They dominate his political organization. They write the propaganda the C. I. O. circulates in political campaigns. They will direct the expenditure of the millions Mr. Hillman proposes to raise for this campaign.

LABOR seriously questions if Mr. Hillman's tactics will aid the Roosevelt-Truman ticket. It is much more likely to injure it. But whatever the effect may be on the presidential campaign, LABOR fears the consequences may be most disturbing to the regular labor movement. Therefore, it seems advisable to repudiate Mr. Hillman's unprecedented program at the very beginning.

Excerpts from this editorial have been quoted and commented upon widely by the nation's press. The MANUFACTURERS RECORD believes that business men as well as members of organized labor should have an opportunity to read it in its entirety.

The MANUFACTURERS RECORD thinks that it is not only "advisable to repudiate Mr. Hillman's unprecedented program" but also to condemn it as the brazen attempt of a few power drunk schemers to seize control of the government of the United States.

# Ration Free

by

**Thurman Sensing**

*Director of Research,  
Southern States Industrial Council,  
Nashville, Tenn.*

During the current global war it has been necessary to ration many things—not in any effort to repeal the law of supply and demand but to restrict as largely as possible the runaway inflation that this law is apt to cause in such troublous times. What this really means is that rationing is necessary in order to protect the people from their own greed—or at least to protect all the people from the natural greed of many of the people.

This may be a sad commentary on our social life and morals but it is at least a realistic view—as the necessity by rationing clearly proves.

There are some things, however, which we have not needed to ration—which we shall never need to ration. Of first rank among these things are courtesy and patience. And we should add, as of equal rank, good humor. These are things which are in unlimited supply and which have no material cost but whose value is immeasurable. He who distributes courtesy and patience and good humor among his fellowmen is rendering them far greater service than if he were handing out food or hardware or money.

In these troublous days such intangible assets are of greater than normal value. It is easy for the merchant, the clerk, the salesman, the doctor, the teacher, the serviceman—for each and every one of us—to ask the question, "Don't you know there's a war going on?" of the one who is asking for goods or services. Of course, this person knows there's a war going on! He would still like to have the goods or services if he can get them. It is not necessary to be abrupt with him or lose patience with him or leave everybody in a bad humor just because his request can't be granted.

It is just as easy to be courteous when advising that goods or services are not available, to sympathize

with this person in his inability to secure them, to be patient in explaining why they can't be secured—and, above all, to inject a sense of humor throughout. It is just as easy—and how much more valuable! Customers are not dissatisfied, even though refused: their goodwill is retained and they will remain customers in that period after the war when goods and services are plentiful and customers will be sought. More than that, each of us, by practicing these things, can live in self-respect with our neighbors and in an atmosphere of goodwill and well-being of far more value than material goods.

We Southerners are happy to believe that the things discussed, the qualities of courtesy and friendliness and hospitality and patience and goodwill and neighborliness and good humor, are typical of our land. The South is traditionally friendly and hospitable. That is a tradition of which we should be proud. We should consider it one of our most valuable possessions, as valuable as our great natural resources, our factories, and our farms—maybe more so.

The South must be careful in its industrial development, in its commercial progress, in its search for a higher standard of living through the acquisition of those material comforts of life which mean so much to the welfare of a people—the South must be careful—not to lose its traditional regard for those intangibles of living which in the long run are so valuable in the life of a people. The South has a splendid tradition to uphold. Now when so many are losing their sense of values and the true conception of social relationships, it is more important than ever that the South remain faithful to these traditions. In so doing, it will make a wonderful contribution to the enduring welfare of the nation.

"The South Has No Race Problem," written by Mr. Sensing and printed in the July issue of MANUFACTURERS RECORD was so well thought of by our readers that requests for many thousands of reprints have been received and filled. A fourth reprinting of this article is now being made. While they last these reprints may be purchased at cost.

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# MONEY MERCHANTS MAKE PLANS

**B**USINESS men, some of whom may be feeling none too easy as they think about the post-war future, will find mental relief and encouragement in the plans being made by the nation's bankers. One Federal Agency, the Smaller War Plants Corporation, has already put into practice a revised loan policy that considerably lessens the problems facing the holders of war contracts likely to be or heretofore terminated.

The future policies of Southern bankers, as represented by those within the Sixth District of the Federal Reserve Bank and reported by the Federal Reserve Bank of Atlanta, are down-to-earth and considerate of what they expect to occur. Their investments are being so re-arranged as to provide the ready cash for post-war needs and to buttress themselves against the expected reduction in deposits.

The over-all credit picture has been summed up by Robert M. Hanes, chairman of the Post-War Small Business Credit Commission of the American Bankers' Association and former president of that Association:

"Every competent individual, firm or corporation in the United States that needs bank credit will get it if the money is to be used for some constructive purpose that will serve the private enterprise economy of this country. American banking will see that small business lives and is given the opportunity to grow and prosper."

"It should be clearly understood, however," continued Mr. Hanes, "that this does not mean that banking is embarking upon a program of making reckless loans. Such loans are of no benefit to the borrower, the bank or the community. Nor is it to be construed that banks have not been making loans to small business men of character and ability. In 1940, the last full year of peacetime business operation, the banks of the country made more than twenty-four million loans, the average new loan being approximately \$1,700."

"Never before have the banks of this country had such a tremendous

storehouse of credit with which to serve the multiple needs of post-war business, industry and agriculture as they have today. The deposit structure is now far in excess of one hundred billion dollars. This volume of funds is adequate to finance the credit needs of post-war America regardless of the proportions that may be reached in national production. This credit will be released just as soon as the economic condition of the country permits and government regulations restricting the extension of credit in many lines of activity as a precaution against inflation are lifted."

Many banks throughout the country, according to Mr. Hanes, are already establishing small business loan departments or units under some similar name. According to his Commission's plans, the term loan principle will be adapted to the needs of small business. This effective lending mechanism whereby loans are made for a year or more under agreed conditions was developed extensively by banking during the past ten years. At the close of 1940, some 3,000 commercial banks held an estimated two billion one hundred sixty-two million dollars in term loans.

The Commission itself is undertaking immediate research into the problems of small business under the guidance of its newly-appointed staff director, William Shepherdson, former chief of the Small Business Unit of the Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.

Under the new SWPC policy, when a contract is terminated for

**Bankers busy building post-war fences. Ample resources ready for coming business needs.**

the convenience of the government, all payments on the loan made to finance that contract will be suspended until the termination claim of the contractor is paid. Heretofore, SWPC loan agreements have made no reference to the termination of war contracts and the borrower was required to make regular payments even though his funds might be tied up in a termination claim taking months to settle. The contractor will now pay SWPC when his termination claim is paid.

The SWPC interest rate has been reduced to 2½%, which is the rate to be paid to the contractor by the war agency on his termination claim under the Contract Termination Act, recently enacted by Congress, and will be payable only upon settlement of the termination claim. The contractor, therefore, in paying SWPC this reduced rate, will pay exactly the same rate he receives and there will be no loss nor profit to anyone on the transaction.

The new SWPC policy is applicable not only to future loans but also to all SWPC loans made heretofore for financing war contracts. It covers loans made both to prime and to subcontractors.

In the South, bankers are getting ready to handle the sizable volume of borrowing anticipated.

In securing suitable liquidity and to meet a possible decline in deposits, Southern bankers are almost unanimous in agreeing on this procedure: first, utilize receipts from maturing short-term Government securities; second, draw upon their cash assets; third, cash in Government securities if more funds are needed; fourth and as a last resort, borrow from Reserve Banks.

A bright note in the bankers' consideration of the post-war period is the preparation they are making to handle an increase in personal loans. This expectation is based upon the coming demand for consumers' durable goods. Cashing of savings bonds are not expected to be large enough to satisfy the widespread demand. Some individuals, (Continued on page 58)

Resources of Southern banks were \$21,944,069,000 (Dec. 31, 1943), a gain of 20 per cent over the preceding year. Resources of banks in the rest of the U. S. gained 16.2 per cent. Southern deposits were \$20,519,730,000, a 21.9 per cent gain. Rest of U. S. deposits gained 17.1 per cent. Southern savings deposits were up 13.6 per cent, rest of country 13.4 per cent.

—from the Blue Book of Southern Progress, published by the Manufacturers Record.

# Southern Research Institute

by

**Thomas W. Martin**

*Chairman of the Board of Trustees*

*Southern Research Institute*

*President*

*Alabama Power Company*

*Birmingham, Ala.*

SINCE the first of these two articles was published, announcement has been made of the appointment of Dr. Wilbur Arthur Lazier of Wilmington, Delaware, as Director of Southern Research Institute. The selection of Dr. Lazier has come after long and painstaking search for the person having the exceptional combination of qualities required for this position.

The Board of Trustees, a year ago appointed a committee to recommend a director for the Institute whose qualifications should include an adequate educational background and such scientific training as would lend itself particularly to the solution of southern economic problems; scientific curiosity and receptiveness to new ideas, but with intellectual integrity and practical judgment; high professional standing in the sciences; capacity to plan a broad program and handle diversified research projects; actual creative accomplishment as evidenced by patents taken out in his own name; ability to talk with business men about their technical problems; administrative capacity and success in building up an adequate research staff and in leading it to successful accomplishment.

The committee sought recommendations of possible candidates from authoritative sources, including recognized leading scientists of the nation; heads of the scientific departments of universities; and research directors of large national manufacturing organizations. From these sources and from advertisements placed in trade periodicals came many suggestions which were in the course of investigation reduced to a total of 194 actual applicants who appeared to show promise of having qualifications for the post. Through numerous interviews this number was narrowed to three candidates who appeared best to meet the requirements for the position, and finally on the recommendation of the committee and of competent authorities in research fields, the appointment was given by the Board of Trustees to Dr. Lazier.

Dr. Lazier is 44 years of age and

*This is the second of two articles especially prepared for MANUFACTURERS RECORD by Mr. Martin. The first appeared in the July issue. In this article Mr. Martin tells about the Institute's director, its present site with plans for future development and outlines the working plan under which it will operate.*

took his B.S. in Chemistry in 1922 at the University of Illinois; his M.S. in 1923 and his Doctorate in Chemistry at the University of Wisconsin in 1925. Since the latter year he has been in the Chemical Department of E. I. du Pont de Nemours and Company, and has a distinguished record of accomplishment in research and development work at the Du Pont Experimental Station. He is acknowledged by authorities to be one of the best informed persons in the country on problems incident to catalytic hydrogenation — a process of importance in conversion leading to ultimate utilization of many southern resources,—and of the chemistry of organic compounds containing sulfur. He was a leader in the development of the processes for producing intermediates used in the manufacture of nylon. Earlier he had personally developed important catalysts for the synthesis of wood alcohol. Dr. Lazier also discovered and developed processes for producing the intermediates necessary to the manufacture of "soapless soap." More recently he has devoted a large part of his time to special chemical assignments for the Armed Serv-

ices. Dr. Lazier won a "Modern Pioneer Award" of the National Association of Manufacturers in 1940; and since 1942 has been consultant to the National Defense Research Committee. He is a member of American Chemical Society and Franklin Institute.

While Dr. Lazier is one of the nation's distinguished young scientists in the chemical field, it is the plan of the Institute to associate with the Director competent authorities in other applied sciences, such as physics — including electronics, mechanics and allied engineering fields. Our ultimate aim is to have a staff well balanced among the applied physical sciences.

## Location of Institute

The home of the Institute, just recently acquired, is situated on South 20th Street, one-half mile from the center of downtown Birmingham, and consists of a large institutional type of building on grounds comprising slightly less than two acres. The location is at high elevation overlooking the business part of the city and its central position affords the maximum of convenience.

The building is now about to be converted and will provide space for a technical staff of 20 to 25 researchers. The laboratories are immediately to be equipped with the most modern research facilities. These installations, together with other laboratory facilities available nearby, are thought to be adequate for the first year or two of operations, or until construction of the ultimate home of the Institute can begin.

The spacious grounds will permit eventually a building of large proportions. At present it is thought that construction will, when future events justify it, be in functional units, such additions gradually to be made until the final building adequate to the purposes of the Institute is attained.

## The Fellowship Plan

In the previous article, brief mention was made of the Fellowship



*Dr. W. A. Lazier, director of the Southern Research Institute*



*Newly acquired Birmingham home of the Institute.*

Plan—the chief operating method adopted by the Institute.

On this basis the client will establish a "fellowship" in the Institute for the pursuit of the client's specific research problem. In the agreement entered into with the Institute, the sponsor will set forth the objectives of the fellowship, establish a fund for its prosecution and the Institute will employ research men specialized in that particular field who will be assigned exclusively to that research problem. The sponsor of the fellowship will pay into the Institute a sum of money commensurate with the purpose and cost of the investigation for the agreed period, and all salaries and expenses connected therewith and all special equipment and services essential thereto, will be paid from that fund. All researchers engaged for the investigation will be the employees of the Institute which will have the responsibility of directing the research. The fellowship will operate under a specific agreement between the sponsor and the Institute and contracts will usually be made for one year periods, with the provision that they may be extended upon mutual agreement between the sponsor and the Institute.

The agreement will stipulate the estimated cost of the fellowship which will include an amount to be retained by the Institute for overhead and general expenses of the Institute. The contract will set forth that all the remainder of the fellowship fund shall be devoted en-

tirely to the costs of that investigation and shall not be used for any other purpose whatever.

The industry sponsoring the fellowship will be kept informed as to the progress of the undertaking and will be expected to lend its active support to the fellowship program and will make available to the Institute its own special knowledge, its experience relative to the research undertaking at hand, and its own research and industrial facilities whenever such cooperation is indicated to be of aid in the solution of the sponsor's research problem.

Any discoveries growing out of the investigation shall become the exclusive property of the fellowship sponsor, and it will be incumbent on the Institute to assign all rights, patents and titles to the sponsor. The Institute will have no financial interest whatever in the discoveries, and will derive no profit therefrom, with the exception of the overhead allowance as specified in the contract covering the institution of the fellowship. There may be some exception in the application of this principle in those cases where the investigation has involved some peculiar special knowledge already acquired by the Institute in its own research. Moreover, the Institute is bound to complete secrecy as to the developments and will agree that no publication thereof shall be made for a stipulated period, without consent of the sponsor.

#### **Associative Research at the Institute**

An association of manufacturers may maintain an industrial fellowship in the Institute in behalf of those firms in an industry having problems of common interest which are so basic or of such general application that the results of research thereon are of importance to all company members. This type of research work may be carried on without interfering with competitive interests or the relative commercial positions of the cooperating firms. The experience of other research institutes shows that competitors can work harmoniously on a research program, provided the problems selected are of concern to all members of the association and do not require the disclosure of confidential information by any member of the organization.

Such a fellowship will enable direct research service to a number of industrial concerns instead of to an individual company, and should serve as a clearing-house of information for the sustaining organization, giving technical assistance and scientific advice to company-members.

One of the advantages of associative research is that it enables a small manufacturer, who cannot afford to have a research laboratory of his own, to profit from scientific research in the same way as a larger manufacturer. It will reduce the

(Continued on page 70)



Left—Antenna installed on roof of the Seaboard Air Line diesel-electric locomotive during recent test of engine-to-caboose radio communication. A. Pickman, sales engineer, and W. L. Webb, chief engineer of Bendix Radio, examine the device.

by

Warren T. White

Special Assistant to Receivers  
President  
Seaboard Air Line

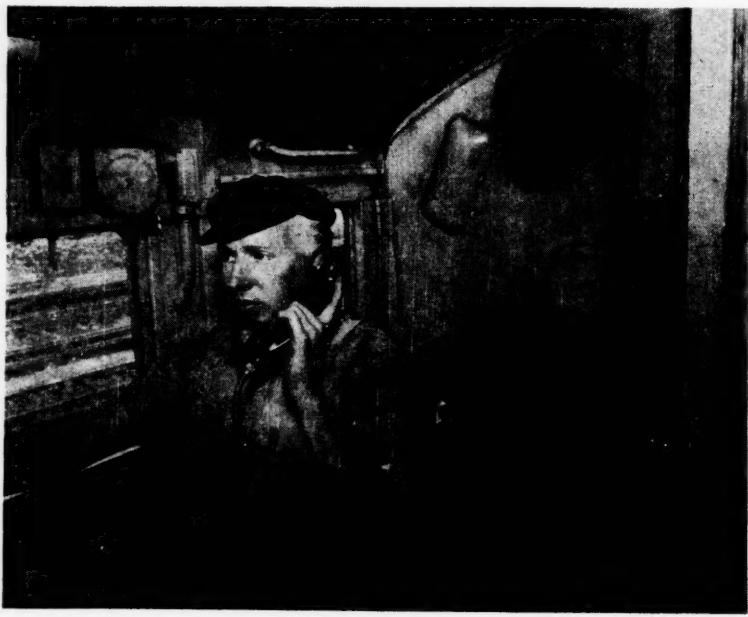
THE South's air waves two months ago carried a new message. "Cab to Engine, come in, please," were the words which marked the first test of intra-train radio telephone communication in this section. The conductor of a 75-car freight train operated over the Seaboard Air Line Railway was seated in the caboose and carrying on a conversation with the locomotive engineer some three-quarters of a mile distant.

The tests, which were conducted over the period July 5th-8th, saw the train move from Richmond, Va., to Miami, Fla., a 1,040-mile route which traversed terrain generally characteristic of the types found throughout the Seaboard system. Reception was uniformly good throughout the entire trip, cuts, curves and steel bridges producing no perceptible effect on the quality of the operation. This was also true when a severe lightning and thunder storm was encountered, as well as in areas where high-voltage power transmission lines either paralleled or crossed the right-of-way.

The radio units used were developed by the Radio Division of Bendix Aviation Corporation, located at Baltimore, Md., and were composed of very high frequency multi-channel radios which consist of transmitter, receiver, and power unit in a single compact case. Radio telephone operation is used and signals are heard in the locomotive and caboose by means of loud speakers. A hand set similar to that on the ordinary telephone is supplied and operation is quite similar to everyday telephoning, with the exception that a "push-to-talk" button is pressed when transmitting.

In undertaking these tests, the Seaboard is seeking to determine

Below—C. W. Tennant, Seaboard locomotive engineer, communicates with the conductor of the freight train via radio.



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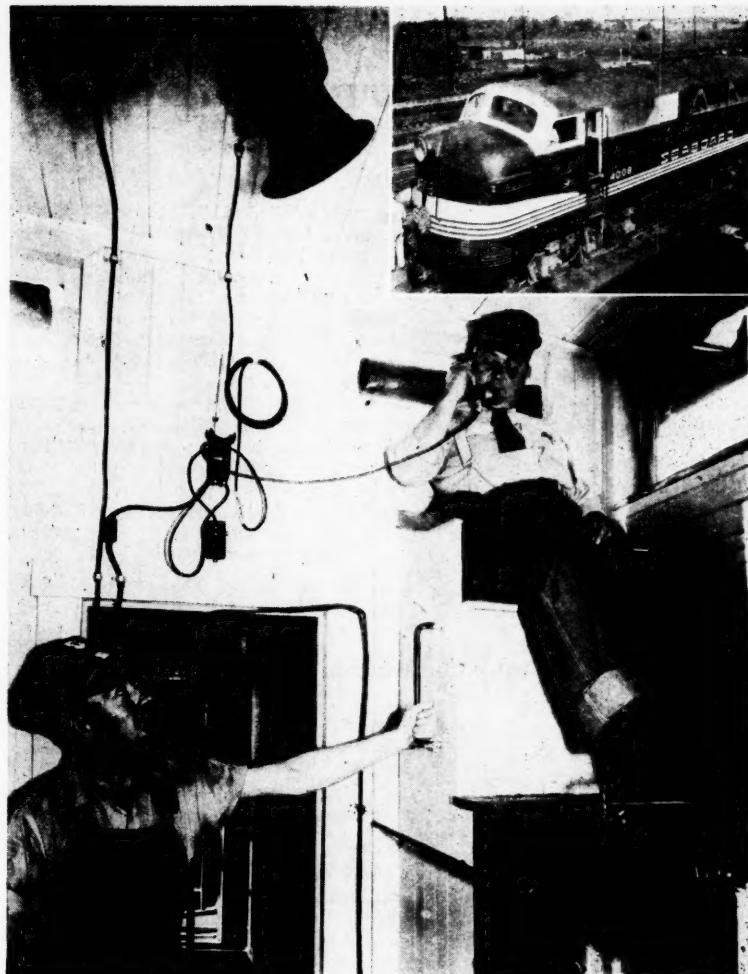
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**Right—M. P. Nicholson, freight train conductor, communicates with the front end during the Seaboard Air Line test of radio. Flagman W. A. Fuller stands by. The inset shows the diesel-electric locomotive used during the procedure.**

the most practical and effective applications of radio in railway operations. The test from Richmond to Miami involved only communication from end to end of a train, but additional tests are to be conducted at Richmond to ascertain the possibilities for employing radio communication in large terminal and yard operations.

An important prospect for the use of radio in railroad operations is the reduction of line-of-road delays, with a resultant shortening of overall train schedules. This is particularly applicable to freight service. For example, whenever a train is stopped along its route, the flagman, who rides in the caboose, immediately goes back to warn approaching trains of the fact that his train is stopped. When his train is again ready to proceed, the engineer employs the locomotive whistle to signal the flagman that the train is ready to move. The flagman then leaves torpedoes on the rail and a lighted fusee by the track (a standard practice on all railroads) and returns to his train. Having no audible signal apparatus, the only means of notifying the engineer of his return is by hand signal. Due to the length of the train and intervening cuts and curves this often takes several minutes and much valuable time is lost. With radio communication between caboose and locomotive it will be a simple matter for the flagman to inform the engineer the instant he is aboard and the train may proceed. While the time saved through radio communication may be measured in terms of minutes for a single stop, a simple calculation of the number of stops made by freight trains quickly shows the over-all saving of time that could be made.

In addition to the benefits which



could be obtained in line-of-road operations, many possibilities for expediting and improving yard operations may exist in radio communication. This is especially true in large terminals working many switch engines at widely scattered points and at present out of touch with the yard office and yardmaster

except through messenger. Another advantage would be that, in these same terminals, incoming freight trains could be notified in advance of what track they are to enter, thereby avoiding stopping of the trains entering the yard as well as giving the yardmaster greater flexibility in setting up his yard operations.

The making up of outgoing trains, as well as the distribution of cars delivered by incoming trains, can be speeded up to a large extent where instantaneous communication between yard crews and the yard office is available.

Some future time may find radio employed for the dispatching of trains and, as the science develops, tomorrow's passenger may relax on a speeding train and in the privacy of his own room carry on conversations with his home or office as easily

(Continued on page 70)



**Right—W. R. Olive, general superintendent of transportation for the Seaboard Air Line, participating in the front-to-rear test of train radio communication system.**

# Contracts Total \$63,749,000 in South during August

by  
**Samuel A. Lauver**  
*News Editor*

**SOUTHERN** construction contracts totaled \$63,749,000 in August. The aggregate of contracts for the elapsed eight months of 1944 is \$550,770,000 with public construction and public building dominating the construction picture. Most of the industrial expansion so far has been publicly financed, especially those larger projects that contribute substantially to the construction totals.

Privately financed construction in Au-

gust totalled \$2,543,000 with sixty-five percent being residential construction, which has been a bulwark in this field where wartime restrictions have practically dried work to a mere trickle. Highway activity rose twelve per cent. The August figure mounted to \$9,531,000, as compared with the \$8,410,000 of the preceding month.

Industrial awards were \$14,585,000. Public building, despite a drop of several million, amounted to \$21,059,000. Public engineering totaled \$16,231,000. Airport and river bank protection continued to embrace a large proportion of the public engineering total.

Seven states—Texas, Louisiana, Missis-

sippi, Virginia, Georgia, Maryland and Florida—accounted for over seventy-seven per cent of the August total. The Texas lead was bolstered by a sizeable proportion of industrial activity, engineering and highway contracts. Louisiana's second place figure involved a combination of public engineering, public building and industrial awards.

Public building and industrial awards were responsible for much of the Mississippi total. Maryland and Georgia were active in the industrial, public building and engineering categories and Florida, in the latter two.

State totals, in the order of their importance, were: Texas, \$11,201,000; Louisiana, \$9,964,000; Mississippi, \$7,061,000; Virginia, \$6,438,000; Georgia, \$5,619,000; Maryland, \$5,476,000; Florida, \$3,909,000; South Carolina, \$1,807,000; Arkansas, \$1,797,000; Oklahoma, \$1,666,000; Kentucky, \$1,578,000; Missouri, \$1,428,000; Tennessee, \$1,422,000; North Carolina, \$1,349,000; Alabama, \$1,148,000; District of Columbia, \$1,147,000; West Virginia, \$739,000.

Proposed projects last month included a ship conversion plant at Ojus, Fla.; a railroad extension and coal mine expansion in Kentucky; an airplane plant extension in Louisiana; a \$715,000 factory in the same state; several large projects at Baltimore; a \$100,000 cold storage project and a \$100,000 dairy in North Carolina; a \$2,750,000 power plant addition, a \$300,000 dock and terminal, a \$110,000 packing plant and rice conversion facilities to cost \$600,000 in Texas; as well as a \$3,000,000 ordnance works expansion and a large recycling plant, and a \$1,000,000 chemical project in Virginia. Projects in the contract stage included:

A paper plant extension at Savannah, Ga., costing \$1,500,000.

New loading line at a Mississippi ordnance plant, cost \$3,000,000.

\$240,000 service building for a cable manufacturer in Missouri.

\$100,000 addition to a Missouri electrical equipment plant.

Additions and conversion at a Tennessee ordnance plant, cost \$600,000.

Shell loading plant expansion in Texas to cost several millions.

A \$250,000 Texas butadiene plant conversion job.

Locomotive shop in Virginia, cost \$100,000.

Railroad car repair shop, West Virginia, estimated cost \$500,000.

## South's Construction by Types

	August, 1944		Contracts Awarded	Contracts Awarded
	Contracts Awarded	Contracts to be Awarded	First Eight Months 1944	First Eight Months 1943
<b>PRIVATE BUILDING</b>				
Assembly (Churches, Theatres, Auditoriums, Fraternal)	\$ 773,000	\$ 3,658,000	\$ 3,422,000	\$ 1,079,000
Commercial (Stores, Restaurants, Filling Stations, Garages)	105,000	535,000	2,127,000	1,582,000
Residential (Apartments, Hotels, Dwelling)	1,685,000	10,965,000	34,767,000	44,707,000
Office	.....	.....	239,000	45,000
	\$ 2,543,000	\$ 15,138,000	\$ 40,555,000	\$ 47,413,000
<b>INDUSTRIAL</b>				
PUBLIC BUILDING	\$14,758,000	\$ 28,812,000	\$ 106,556,000	\$ 328,326,000
City, County, State, Federal	2,689,000	1,907,000	43,099,000	152,580,000
Housing	3,612,000	4,240,000	12,759,000	11,102,000
Schools	.....	.....	.....	.....
	\$21,059,000	\$ 34,999,000	\$ 162,414,000	\$ 492,008,000
<b>ENGINEERING</b>				
Dams, Drainage, Earthwork, Airports	\$12,181,000	\$ 24,589,000	\$ 126,938,000	\$ 209,430,000
Federal, County, Municipal Electric	390,000	3,015,000	960,000	4,322,000
Sewers and Waterworks	3,660,000	20,771,000	20,466,000	27,700,000
	\$16,231,000	\$ 48,366,000	\$ 148,334,000	\$ 241,452,000
<b>ROADS, STREETS AND BRIDGES</b>				
TOTAL	\$19,531,000	\$ 20,036,000	\$ 65,028,000	\$ 97,049,000
	\$63,749,000	\$141,750,000	\$550,770,000	\$1,108,185,000

## South's Construction by States

	August, 1944		Contracts Awarded	Contracts Awarded
	Contracts Awarded	Contracts to be Awarded	First Eight Months 1944	First Eight Months 1943
<b>Alabama</b>				
Arkansas	\$ 1,148,000	\$ 2,376,000	\$ 26,707,000	\$ 40,413,000
Dist. of Col.	1,797,000	1,955,000	4,238,000	25,344,000
Florida	1,147,000	550,000	15,203,000	11,527,000
Georgia	3,909,000	18,070,000	65,716,000	142,625,000
Kentucky	5,619,000	8,130,000	32,688,000	76,845,000
Louisiana	1,578,000	7,843,000	18,476,000	29,515,000
Maryland	9,964,000	5,981,000	44,487,000	65,270,000
Mississippi	5,476,000	7,086,000	47,049,000	74,356,000
Missouri	7,061,000	6,079,000	16,866,000	31,243,000
N. Carolina	1,428,000	3,982,000	35,086,000	18,290,000
Oklahoma	1,349,000	18,490,000	17,732,000	41,595,000
S. Carolina	1,666,000	1,749,000	18,556,000	82,986,000
Tennessee	1,807,000	1,334,000	17,273,000	42,667,000
Texas	1,422,000	2,826,000	19,076,000	84,723,000
Virginia	11,201,000	39,610,000	95,219,000	270,295,000
W. Virginia	6,438,000	14,116,000	68,514,000	61,523,000
	739,000	1,623,000	13,134,000	8,868,000
	\$63,749,000	\$141,750,000	\$550,770,000	\$1,108,185,000

## New Sulphuric Acid Plant Under Way in Virginia

General Chemical Co., a subsidiary of Allied Chemical & Dye Corp., will operate the \$1,000,000 chemical plant now being constructed as a Defense Plant Corporation facility at Front Royal, Va., by F. H. McGraw & Co., Hartford, Conn., contractors.

Modern in design, the plant upon completion will produce sulphuric acid, a chemical used in both war and peace. According to H. O. C. Ingraham,

# There's Oil In The Magnolia State

THE traveler is beginning to associate Mississippi with oil derricks as well as bayous and magnolias. It is but a scant five years since petroleum was produced in commercial quantities in the state, but the upstart has already become a respected member of the industrial community. Mississippi now ranks twelfth among the oil-producing states and recent discoveries promise to give it an even more illustrious position before long.

The first widespread recognition of the presence of petroleum in Mississippi came in 1860, back before the beginning of the Civil War, when Eugene W. Hilgard, State Geologist, released a volume entitled *Geology and Agriculture of the State of Mississippi*. In it he pointed out the Jackson dome, the first known uplift in the state. No drilling in earnest was conducted for 41 years despite this knowledge.

In 1901, at Bay St. Louis, the first well was drilled, but it, like the 459 others punched deeply into Mother Earth, during the ensuing 38 years, were heart-breaking in their fruitlessness; in spite of all this the faith of oil men never wavered. It began to pay off on August 29, 1939, when the Union Producing Company brought in the first producing well. It was spotted in the Tinsley Field in Yazoo County.

Some of the disappointment borne prior to 1939 was eased by the location of gas in commercial quantities, leading to a drilling campaign which resulted in 196 wells with 146 proving to be of saleable volume. In 1935 there was a total gas production of 9 billion cubic feet. By June 1943 only 19 wells were in production, yielding 2 billion cubic feet. Exhaustion of the wells and salt water interference in the Jackson Field has cut the yield to about one and one-half billion cubic feet, but a bright ray of hope is seen in the plans for future drilling for oil which is expected to produce the usual proportion of gas.

Recent discoveries of oil in the Heidelberg Field of southeastern

Mississippi's oil production now ranks twelfth in nation, expected to increase.

Mississippi have encouraged oil men in the search for domes and oil-permeated porous rock elsewhere in the state. It is known that the coastal plain of Mississippi, Alabama, Florida, Georgia and South Carolina has 155,000 square miles of possible oil lands.

There are now producing fields in the Mississippi counties of Yazoo, Sharkey, Madison, Lincoln, Wayne, Adams and Jasper. The Tinsley Field in Yazoo County in March of this year had 329 wells which had produced 68,369,057 barrels. The remaining 58 of the 388 wells producing in the state were divided among the other 8 fields.

Carey Field, Sharkey County, had 2 wells; Vaughn-Pickens Field in Madison and Yazoo Counties, 36; Brookhaven Field, Lincoln County, 1; Eucutta Field, Wayne County, 4; Flora Field, Madison County, 3; Cranfield field, Adams County, 5, with a combined production through March, 1944, of 51,027 barrels. Heidelberg Field's 8 wells, in Jasper County, produced 20,743 barrels during the same period.

That the future will see increased oil production in Mississippi is assured by the discovery of 22 additional salt domes, located in 14 counties. While the state's oil picture is dominated at the moment by the Tinsley Field, at least one and probably 3 other fields are expected to equal Tinsley's record. The comparative youth of the other fields, wartime restrictions on production and the policy of the larger companies to utilize earlier discoveries have played parts in confining their yields to small figures, but the possibilities are there.

58 wildcat wells were drilled in the state in 1943, 4 being producers, 54 dry holes. In the first quarter of 1944, drilling was conducted at a rate 50 per cent greater than in the

(Continued on page 58)



# From Oil to Coal

by

**Lt. Col. Harold G. Burrill**

Aberdeen Proving Ground, Maryland

**I**N the summer of 1942 there was every evidence of a shortage of fuel oils of all types throughout the United States, affecting government installations as well as industrial plants.

Aberdeen Proving Ground had, among 27 other oil burning plants, a central heating plant supplying a group of large buildings which burned well over 700,000 gallons per heating season. This plant consisted of four 300 H.P. Heine boilers set in battery generating steam at 150 lbs. The original installation was made in 1917 with hand-fired grates which were taken out after about 18 years and Detroit underfeed stokers were installed.

In 1941-42 a Peabody oil burner system was installed complete with 100,000 gallon surface storage tank, pumps, heaters, etc. Each boiler was equipped with two burners of the high pressure forced draft type having sufficient capacity to drive the boiler up to 200% rating. Bunker C or heavy fuel oil was indicated, so proper steam and electric heaters for oil were installed to heat the oil for proper atomization.

All burners were equipped with double or forced draft windbox fronts with Carling steam turbo-blowers as a supply for forced draft. Plans called for use of forced draft at ratings above 150%. The furnaces were refractory lined with burners located under the high end of the boilers and placed about 3 feet above the furnace floor. The size of the furnace was 9'-0" high (7'-0" high at rear end) by 8'-0" wide and 16'-7" front to rear wall, or approximately 1,050 cubic feet furnace volume.

At 200% rating a heat liberation of approximately 18,000 B.T.U. per cubic foot would occur, which on oil is low enough for good furnace wall maintenance.

When orders were received to convert to coal several factors had to be considered. One, speed of conversion; two, materials and equipment available; three, suitability of boilers for coal burning at high ratings; four, ability to get coal of suitable size, type and amount.

Stokers had been suggested for this and other government installations and some were installed at nearby government plants.

Analysis of boiler set-up, boiler house, coal and ash handling problems, plus additional boiler rating to be carried, indicated that stokers with ash pit requirements, bridge wall, etc., would be more costly to install than pulverized coal.

When oil burners were installed, the Detroit underfeed stokers were removed along with the bridge wall. The ash pit and rear cleanout pit were floored over and left at substantially the same level. This meant that the shape of the furnace was low on the rear end and high on the front end, which required installation of burners having relatively flat low flames.

To lower and enlarge the furnace would have required the cutting out of very heavily reinforced concrete made primarily of concrete and old railroad rails. The cost of removing this material would have been greater than the saving that could be effected by the slight increase in furnace volume. Figure 1 shows how the oil burners were installed.

From Figure 2 it can be seen readily that to install coal burning apparatus of the stoker type with-

out materially destroying or disturbing oil burners, etc., presented quite a problem. So, pulverized coal was finally decided upon.

Duplex burners handling both oil and coal were first considered but upon investigation it was felt that with the existing pressure type forced draft oil burners a plain type pulverized coal burner would best handle the widely varying loads, different types of coal and amounts of coal consumed in conjunction with oil burners.

The next problem was to find a suitable location for the pulverized coal burner in the front wall of the boiler located so as not to disturb the oil burners, forced draft front, etc. This burner could be installed above and between the oil burners in a normal installation but in this case brought the pulverized coal flame too close to the bottom row of boiler tubes. Several layouts were tried and it was finally decided to place the pulverized coal burner above and between the present oil burners but to tilt the burner 5 degrees downward so that the center lines of the 3 burner flames would intersect in a horizontal plane in the center of the furnace. In selecting this location the horizontal baffles of the Heine boiler were kept in mind in that the gas travel was toward the back of the boiler furnace, not forward as in vertically inclined baffles; so that the tendency was toward long arrow flame.

Strong-Scott pulverizers were selected due to size, availability and cheapness of renewable or wearing parts and the fact that no magnetic separator was necessary. One pulverizer per boiler was selected having a normal capacity of 1,200 lbs. of coal per hour and a maximum of 1,320 lbs. per hour corresponding to a heat liberation of 12,800,000 B.T.U. per hour corresponding to a little over 150% rating. While theoretically not large enough for a boiler of this size, a small pulverized coal burner was selected which actually handled loads in excess of 150% rating when the coal was dry. On heavy peak loads oil was turned on for an hour or more to boost the

**large army  
heating plant  
converted to  
coal without  
removing oil  
burner system**

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Right—(top)—Figure 1 shows clearance between coal and oil burners at Aberdeen heating plant. The Carling steam turbo-driven force draft blower is above the pulverized coal pipe elbow.

Right—(middle)—Figure 2 indicates the location of the pulverizer on the boiler room floor, in relation to the oil burner and forced draft boiler front. The motor driven boiler feed pump is on the platform in the upper left.

Right—(bottom)—Figure 3 pictures the fuel oil pumps and heaters located in the opposite end of the boiler room, with No. 1 coal pulverizer in the right foreground.

pressure when only three boilers were on the line.

Installing the pulverized coal burner required dismantling part of the front wall brickwork and relocating the Carling steam turbo-blower to one side in the forced draft front windbox, which did not alter its efficiency or mar the appearance of the installation.

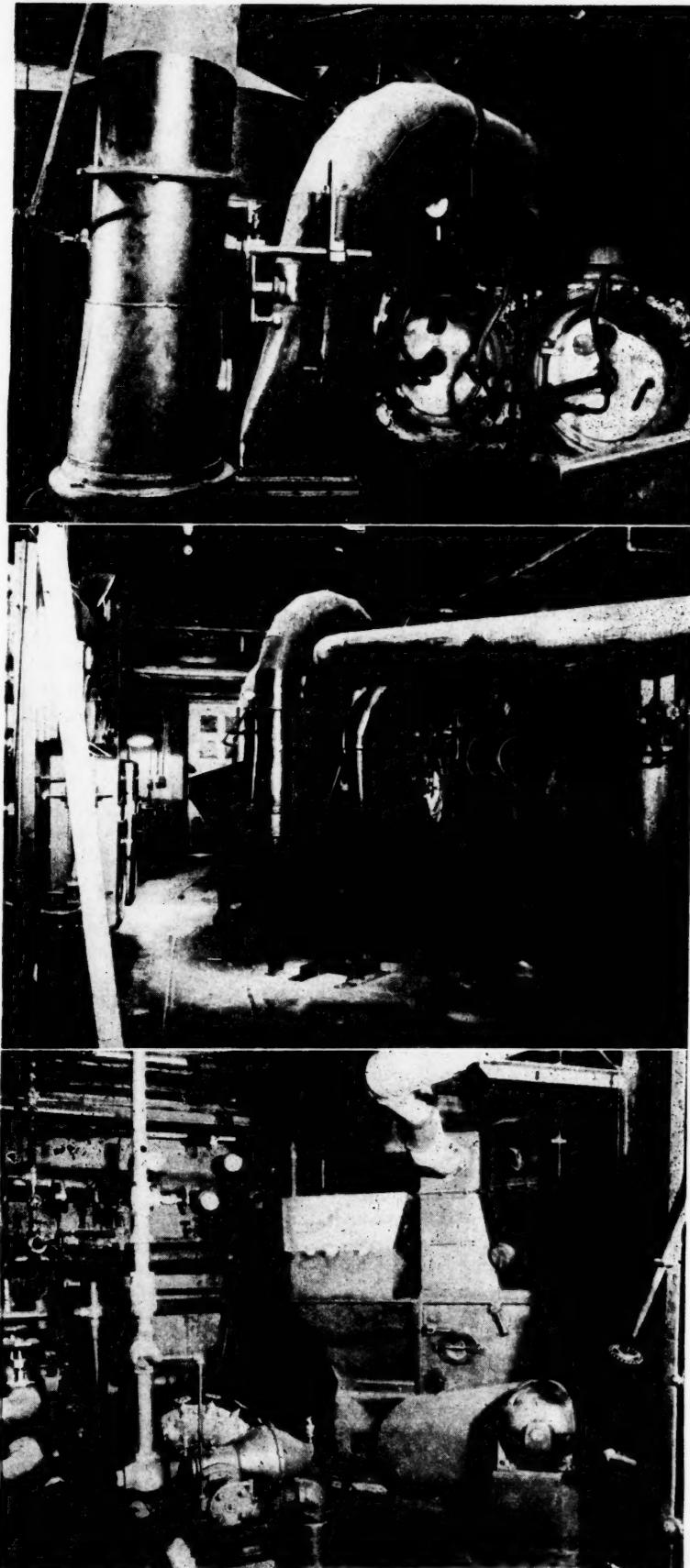
Coal was stored outside the boiler room wall and carried in through a doorway to each pulverizer by using shovel and wheelbarrow. Each unit pulverizer coal hopper holds 500 lbs. of raw coal which was sufficient to supply the coal feeder of the pulverizer and hold enough coal for drying while the supply was replenished by hand shoveling.

Ash handling was accomplished by providing doors at floor level for cleanout purposes and allowing the heavier ash particles to accumulate until the week-end when the furnaces were cooled down and cleaned out. On coals having less than 10% ash no trouble was experienced in running one week or more on one cleaning. Fly ash gave no trouble except some accumulated on the edge of the horizontal baffle and was readily blown off with a steam or air lance. Stack discharge of fly ash is relatively small and causes no trouble in spite of being surrounded by residential and industrial buildings.

During mild weather with some oil available, the morning heating load peak was carried by coal and after the peak load fell off oil was used to occasionally increase the pressure. However, during periods of extreme oil shortage the pulverized coal units carried the heavy as well as the light loads.

The pulverized coal burner was installed so that forced draft could

(Continued on page 66)



# Industrial Construction After the War

by

**Louis Kahn**

President

*Albert Kahn Associated Architects &  
Engineers, Inc.  
Detroit, Michigan*

MANY factors point to a rate of industrial construction after the war far above the level in the last preceding peacetime decade, despite the tremendous volume of emergency war plant construction.

The emergency construction may be largely discounted as a peacetime production factor. Much of it was single-purpose construction, designed to build one product and not always well adapted to conversion for other civilian goods. Much of it, also, was semi-permanent construction, laid out for a productive life of about five years. Indications are that a high percentage of war plants will remain under government control as "stand-by" protection, or on research and experiment.

What remains of war plants likely to be converted to peacetime goods will be largely offset by plants which were at or near the age of obsolescence before the war, were converted to war items, and will not be reconverted after the war.

Industrialists have become increasingly conscious of the tremendous influence plant layout and design has on cost control. The intense competition indicated for postwar markets, after material and manpower controls are lifted, dictates the managerial wisdom of efficient production housing to get costs to a minimum.

Industrialists are also becoming increasingly conscious of modern plant housing as a factor in good employee relations. Workers prefer a clean plant, well ventilated and utilizing a high degree of natural daylight—a plant with easy highway access and convenient parking facilities. Such a layout produces better work and lower labor turnover, all other factors being equal.

These are two of a variety of reasons why the industrial architect can report—on the factual basis of queries and commissions—a post-war rate of industrial construction decidedly on the optimistic side.

A good share of America's industrial plant was at or near the age of obsolescence before the war. Much of it was located in congested inner town areas, sites chosen because of

the necessity for being near public transportation facilities for the movement of workers. This need no longer exists. A large number of companies, realizing that an obsolete plant was running their production costs too high, also had decided, just before the war, either to build a new plant or to modernize their going facilities, but they deferred action because they did not want to interrupt production schedules in the good pre-war selling years after 1938. There will be no such deterrent in the adjustment period immediately following the cessation of hostilities.

This factor holds high promise as a cushion against immediate post-war unemployment, because the industrial construction industry can move as fast as materials are released, and construction reaches into every segment of America and gives work to many hands.

An analysis of the work waiting to be done in the field of industrial building breaks down into at least ten different categories. Including

those already touched on in this paper, the ten are elaborated on in some detail:

1. In the automobile industry particularly, and in many other industries to a lesser degree, whenever there is a change in model, there is a change in plant layout. This may entail extensions to the plant which ordinarily would be kept to a minimum to avoid confusion, expense and to minimize the period during which the change is made. After the war, however, when plants are converted from war to peacetime operation, the problem will be attacked with a more liberal attitude and therefore any required extensions, we believe, will be given greater consideration.

2. Operations since Pearl Harbor have been almost 100 per cent war-work. The populace has drawn on the inventory existing at that time which has not been replenished. Therefore, at the end of the war, inventories will be practically nil and the necessity for building up of our national inventory will be added to the then existing great demand for consumer goods, which will magnify the need for manufacturing.

3. During the war there has, of necessity, been much research. It has resulted in the development of many new articles and in improvements in existing articles. This will be reflected during peacetime in the production of consumer goods for public consumption.

4. Many new plants have been constructed by the Government. Some of these are of temporary construction and may be abandoned. Others are of such great size that they will not be adaptable for most organizations, but will have to be used by certain large organizations and, in many instances, for storage purposes. Other plants, of permanent type construction and of adaptable size, will be acquired by certain organizations.

Having been built to modern specifications and with many modern improvements, they will render other plants even more obsolete than they were. Organizations owning these latter buildings, in order

*post-war level  
to be far above  
that during  
pre-war peace  
decade, says  
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to compete, will therefore be confronted with the necessity of modernizing their plants, constructing new buildings, revamping present ones, installing more mechanical handling devices, better methods of lighting, better methods of heating, better methods of ventilation, more modern conveniences for the employees, and otherwise improving their layouts so that the results of their production will be comparable to that of concerns with more modern plants.

Having been rationed for a period of years, there will be a great demand for consumer goods. The change-over period from war to peacetime production will aggravate the shortage and increase the demand. It will be necessary therefore for organizations to speed up production to meet these demands. Speeding up production will bring the supply up to the point of demand and therefore automatically act as a check on inflation. Increasing of supply will increase employment and employment will, in turn, increase purchasing power. It may be proved, however, that the demand will so far exceed the immediate supply of goods that rationing and price control on certain items will cut down the margin of manufacturing profit to a point where economical production facilities will be the manufacturers' only means to profit.

5. It behooves the far-sighted manufacturer to lay his plans now for the future. With the cessation of hostilities, there will automatically be a cancellation of certain types of contracts. For a certain period, therefore, there will be available organizations anxious to hold together, who will be willing to contract for new work at a minimum of profit in order to accomplish this purpose; equipment will be available; manpower will be available.

The manufacturer who is ready to enter promptly into contracts will benefit materially by being in a position to proceed. In other words, he will be producing while his competitor is making up his mind how to proceed.

6. For the last many years there have been no new office buildings constructed, (except in Washington, D. C.) there is a scarcity of apartment houses, hotels and



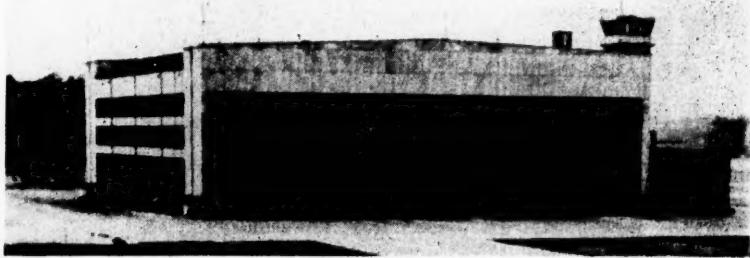
Louis Kahn

homes. All of these must be given attention and preparation made for the construction of new ones required and the replacement of those which are obsolete. Hospitals will be required in great quantities—not only to take care of the civilian needs, but for the rehabilitation of the fighting men who return.

7. The streets are already crowded with automobiles. In many places parking on streets is not permitted. Therefore, public garages must be provided and there is no reason why certain areas underneath the streets should not be used for this purpose. An underground garage of this type has already been constructed in a public square in San Francisco and financially it is successful beyond the promoter's fondest hopes.

8. There have been many new developments in refrigeration and

*Below—One of the latest Kahn-designed projects is this hangar at the new Navy seaplane delivery base at the Glenn L. Martin plant near Baltimore.*



air conditioning, all of which will tend to make the present plants even more obsolete.

9. New Airports will be built with administration buildings, shops, hangars and the enterprises which will make of these airports centers of recreation and civic pride.

10. Railroads had just begun to modernize their rolling stock before curtailment was necessary due to war. There will be an immense field here for the initiation of improvements, which will become imperative in the passenger business to compete with an air-minded population after the war is over.

So much for the ten categories.

The war is teaching us much about the facilities of production. It has taught us new methods of construction. It has taught us to develop substitute materials and to apply them in a multitude of ways, because certain materials which were considered inexhaustible were found under war conditions to be critical.

As mentioned earlier, the postwar industrial plant will be located outside of congested urban districts, permitting ample distribution of facilities, provision for expansion, and adequate parking space.

This plant will stress the importance of flexibility in layout and design. The American people demand change. Producers of motor cars, airplanes, helicopters and the thousand and one other products of American industrial ingenuity and enterprise, encourage that demand, requiring constant alteration of layout and processes to achieve increased economy of production. Efficiency of layout and design will assume large importance after the war when profits will be limited—first, by a probable temporary extension of artificial price controls and, second, by the natural control

(Continued on page 68)

## Bailey Bridges Speed Invasion Troop Progress

**B**AILEY bridges, whose plan was first sketched on the back of an envelope, are closing the wide gaps made in the path of onrushing Allied troops, as retreating Nazis destroy their bridges behind them, only to find that American and British engineers quickly spanned the breaches with what seemed to be miracle speed.

Sometimes called the "jigsaw" bridge, but better likened to the Meccano or Erector set of boyhood days, the Bailey design employs specially constructed 10-foot steel panels as the basic structural unit, insuring "greater strength and simplified construction," according to the inventor, Donald C. Bailey, a 42-year-old Englishman. No nuts or bolts are used. A steel pin is all that is required for each panel.

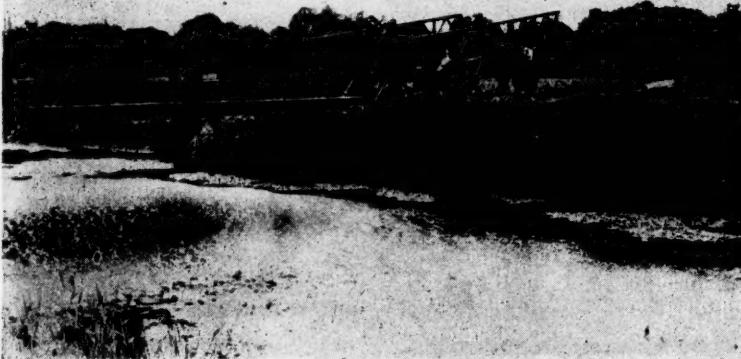
The panels are placed either alongside of each other, on top of one another, or in combination of both patterns to furnish the strength required for a particular bridge. Each row of panels running the length of the bridge is known as a "truss." Panels placed on top of others are called "stories."

Thus, a span with three trusses on either side and three stories high is referred to as a "triple, triple," the strongest version of the Bailey bridge in use, although Inventor Bailey states "there are further possibilities" for his design, which has become a vital part of Allied military strategy by filling the spaces left by enemy demolition squads.

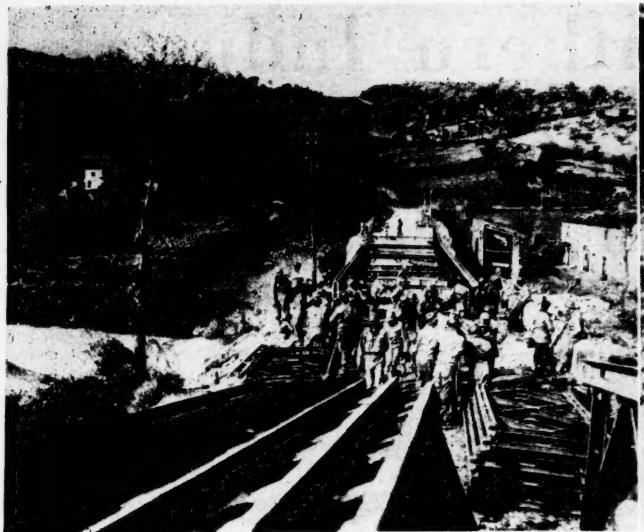
The Bailey design may be used as a railroad span, within limits, or it can be built on a "single, single" scale, which means a foot bridge. Variations of the number of "trusses" and "stories" makes the bridge adaptable to accommodate virtually any military load. It has been described by Army officers as far better than anything the enemy has produced.

Launching the bridge as it is built is a novel operation accomplished by use of "rocking rollers," with the builders keeping the bridge balanced as it is shoved out over the water at the rate of one bay as two others are added. A

(Continued on page 60)

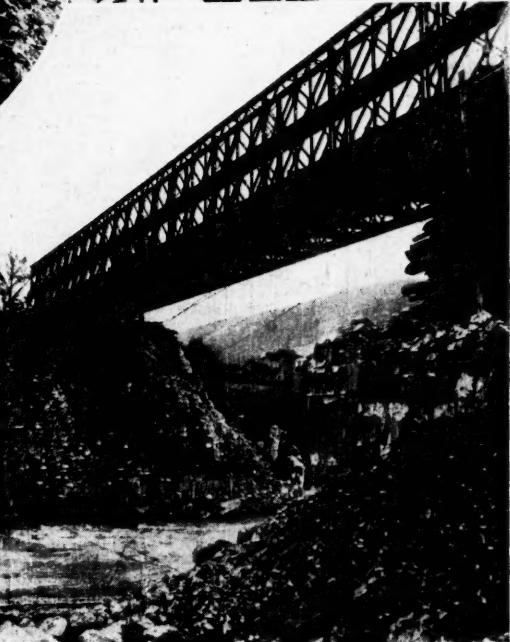
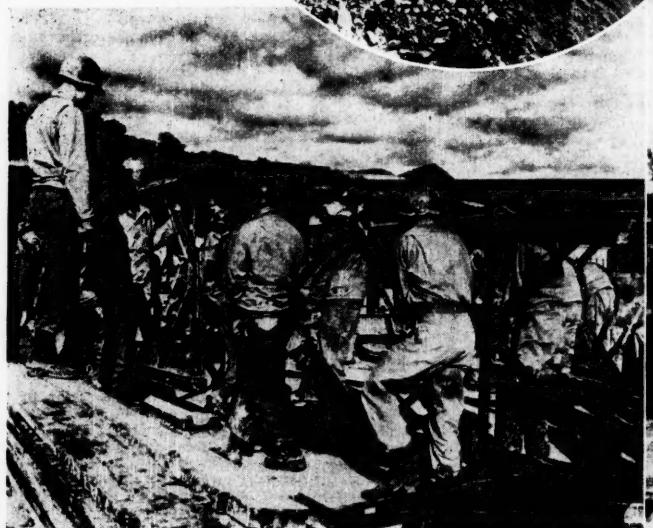
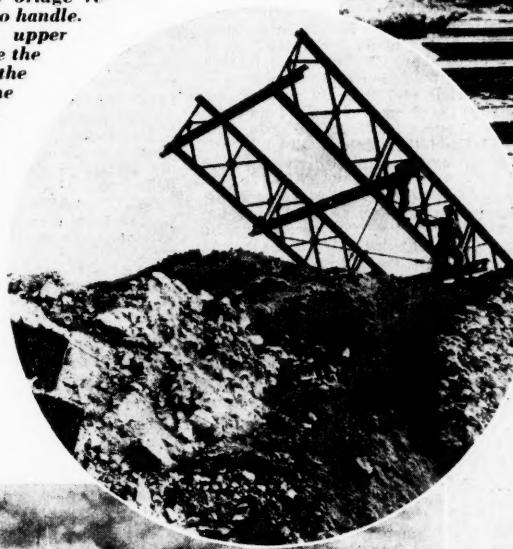


*Left—The Bailey bridge, as it is erected at an engineer school in England. At the top, the men carry another panel to be placed in the bridge. Next, the bridge moves across. In the third view, U. S. Army engineers shove the bridge into place, with the following picture showing the bridge as it spans the stream. The "skeleton nose" is then detached. (U. S. Army Photos.)*



In the circle, the first section of a Bailey bridge hangs out in space as the erecting operation is starting. Above and below are views of soldiers engaged in the building work. The heaviest part of the bridge requires only six men to handle.

In the view at the upper right, engineers make the final check of the bridge, while at the lower right, the 130-foot span is shown finished. The picture at far right shows a Bailey pontoon type span. (U. S. Army Photos through O.W.I.)





# Southern Industrial Expansion - August

## ALABAMA

**BIRMINGHAM**—Expansion—Southern Natural Gas Co., applied to Federal Power Commission for authority to construct additional facilities, including lines, dwelling houses, meters and air cooled mufflers at an approximate cost of \$273,800; also asked for authority to construct at an approximate cost of \$147,272 and operate 5 miles of pipe line near Spaulding, Jefferson County, Ala.; to install 7 air cooled muffler's at company's Perryville, La., compressor station; install 2 gas scrubbers at Logansport, La., dehydration plant; construct a dehydration pipe plant in Monroe gas field near Perryville station; install a new water cooling system at Perryville; and install miscellaneous items including meters, lines and radio equipment.

**GUNTERSVILLE**—Elevator—TVA, Chattanooga, Tenn., granted license to Norris Grain Co., Chicago, Ill., for location of grain elevator.

## ARKANSAS

**Repairs**—Federal Judge George H. Moore, St. Louis, authorized Trustees of the Cotton Belt Railroad to apply to Interstate Commerce Commission for permission to expend \$1,108,960 for repair of 102 miles of track in Arkansas.

**BERRYVILLE**—Lines—Hufford & Kiger, Kansas City, Mo., low bidder at \$143,394 for 60 miles electrification lines and 35.6 miles single conductor in Benton, Carroll and Madison Counties, Ark., and Stone County, Missouri; Carroll Electric Corp., owners.

## FLORIDA

**FORT PIERCE**—Plant—Stevens & Sippie, Orlando, have contract for erection of \$95,000 packing plant for American Fruit Growers, Inc.

**JACKSONVILLE**—Building—U. S. Mengel Plywoods, Inc., jointly owned by Mengel Co., Louisville, Ky., and United States Plywood Corp. of New York, leased Atlantic Coast Line freight warehouse export terminal building, for expansion.

**JOHNSON**—Shipyard—Florida Shipbuilding Corp., John H. Odenback, Miami Beach, plans constructing new shipyard immediately; first contract is five steel oil tankers for U. S. Transportation Corp., each to cost \$450,000.

**SALERNO**—Plant—Shark Industry, Inc., a division of the Borden Milk Co., plans \$50,000 expansion to process shark liver.

## GEORGIA

Federal Communications Commission approved plans to supplement cable and other facilities between Atlanta, Ga., and Dallas, Tex., at cost of \$6,000,000 by American Telephone & Telegraph Co. and Southern Bell Telephone & Telegraph Co.

**AMERICUS**—Frozen Locker Plant—Advanced Refrigeration, Inc., received contract for furnishing and installing the refrigerating and processing equipment and steel lockers at \$11,264 and North Brothers of Atlanta, Ga., received contract for erecting building, installing the insulating, heat equipment; sealed tracks, plumbing and lighting at \$20,308; Sumter Livestock Co., owner.

**ATLANTA**—Addition—Irwin Dale Dairies, erect addition to plant.

**CORDELE**—Plant—Rust Engineering Co., has contract for buildings for Red Diamond Mills, Inc.

**HEPHZIBAH**—Plant—Hephzibah Agriculture Club, plans creosoting plant.

**LINDALE**—Disposal Plant—Ledbetter & Johnson, Rome, has contract for construction of disposal plant for Pepperell Mills; Robert & Co., Engrs., Atlanta.

**MONROE**—Building—Monroe Oil and Fertilizer Co., erecting 845,000 cu. ft. building of steel.

**PELHAM**—Peanut Plant—R. J. Edgely, Albany, has contract for peanut shelling plant for Pelham Oil & Fertilizer Co.

**SAVANNAH**—Steam Plant—Rust Engineering Co., Pittsburgh, Pa., has been awarded contract for design and construction of a new high-pressure steam plant, new power generating station and other auxiliary work in the 1944-45 expansion program of the Union Bag & Paper Corp. at Savannah; project valued at approximately \$1,500,000.

**VILLA RICA**—Mill—Base Hosiery Mill acquired former building of Robards Mill as part of an expansion program.

**WINDER**—Textile—Beacon Manufacturing Co., New York, will install textile mill in plant of Winder Cotton Mills; will install machinery for manufacture of blankets.

## KENTUCKY

**ASHLAND**—Mill—American Rolling Mill Co., Middletown, Ohio, sold its No. 2 sheet mill to Reynolds Metals Co.; mill will be rebuilt by Reynolds Co. for rolling aluminum.

**HARLAN**—Coal Mine—Louisville & Nashville Railroad has plans for extending its tracks 10 miles above Clospoint; development will bring into operation coal mines with an estimated output of 100 to 150 railroad cars of coal daily; 10,000 acres of virgin land tracts owned by Stonega Coal & Coke Co., and Blackwood Land Co., both of Virginia, will be opened up by the proposed extension; estimated cost will include \$3,000,000 for the railroad and \$2,000,000 for the coal companies; other companies opening mines for production are: Fourseam Coal Co., opening up No. 9 seam in a new lease, will strip mine the coal with power shovels, trucking it approximately 7 miles to company's tipple at Diablock; Marlowe Coal Co. is opening up a new seam at Vico, with production about ready to begin and near Blackey in Fletcher county the Jeanne Francis mine is planning to open a new seam to double their present production.

**HIGH SPLINT**—Expansion—High Splint Coal Co., plans \$500,000 expansion program in Harlan County.

**IRVINE**—Plant—Hamilton Carhartt Overall Co., plans erection of addition; brick and steel.

**PADUCAH**—Pottery Plant—Hawaiian Crafts, Inc., chartered by James R. Smith Louis Kirchoff and others with capital of \$100,000 to establish pottery plant.

**PIKE COUNTY**—Coal Mine—Harman Coal Corp., plans development of mine with tipple at Turkey Pen on Big Creek, 40 miles east of Pikeville; have facilities for cleaning and sizing all grades of coal; Norfolk & Western Rwy. started construction of 9-mile extension down the Levisa River to a terminus at Nigh, Ky., from which a spur will extend 3 miles along Big Creek to the new tipple.

**WINCHESTER**—Lines—Clark Rural Electric Cooperative Corp., has allocation of \$15,000 from Rural Electrification Administration for building short electric lines, approximately 25 miles in Montgomery, Fayette, Bourbon, Madison and Powell Counties.

## LOUISIANA

**HAYNESVILLE**—Gasoline Plant—Haynesville Operators Committee will start work on clearing plant site 4 miles northwest of Haynesville; will install approximately 90 miles of pipeline throughout the field in the gathering system.

**NEW ORLEANS**—Freight Terminal—Herrin Motor Lines let contract for 1 and 2-story, brick, steel and concrete freight terminal station; cost \$80,000.

**NEW ORLEANS**—Plant—Defense Plant

Corp., granted a \$1,300,000 increase in its contract with Higgins Aircraft, Inc., to provide additional equipment at plant in New Orleans.

**ST. MARY PARISH**—Dredging—Texas Co., New Orleans, applied for War Department permit to dredge channel and slips, drive piles, construct walk way, etc., for drilling an exploratory well.

**SHREVEPORT**—Plant—The Brewster Co., will start work immediately on construction of a \$715,000 plant on 8 acre site in industrial section of Augurs, 1 mile from present plant.

## MARYLAND

**BALTIMORE**—Equipment—Defense Plant Corporation, authorized increase with contract with Monarch Rubber Co., Inc., to provide additional equipment at plant in Baltimore; cost approximately \$60,000, resulting in an overall commitment of approximately \$130,000.

**BALTIMORE**—Freight Cars—Baltimore & Ohio R. R., placed orders for 1,700 freight cars involving an expenditure of \$5,250,000.

**BALTIMORE**—Pier—Commissioner of Finance approved construction by city of a \$1,000,000 pier on Canton water front to serve a plant to be established there by National Gypsum Co. of Buffalo, New York; Port Development Commission has approved the proposal and will supervise the pier project.

**CENTERVILLE**—Extension—City applied to Public Service Commission, Baltimore, for permission to extend municipal electric supply system serving city and adjacent territory.

**CUMBERLAND**—Stockyard—Alleghany County Farm Bureau, incorporated with \$20,000 capital to erect stockyard near Cumberland.

**HANCOCK**—Storage Plant—Stanley Fulton will erect \$100,000 fruit grading and storage plant.

## MISSISSIPPI

**BILOXI**—Dehydrating Plant—City considering proposal by Whitmeyer Laboratories to establish a dehydrating plant.

**HATTIESBURG**—Power Plant—Steel work underway for superstructure of Plant Eaton, 20,000 kw. steam electric generating station being built by Mississippi Power Co., Gulfport, on Leaf River near Hattiesburg.

**MERIDIAN**—Packing Plant—I. L. Wootten formerly of Dothan, Ala., plans erecting meat packing plant.

**PHILADELPHIA**—Gloves—City authorized to issue \$80,000 bonds for location of glove factory.

**WEST POINT**—Plant—Foster, Creighton, Oman Co., Nashville, Tenn., has contract for construction of new loading line involving a total estimated cost of \$3,000,000 for Gulf Ordnance Plant for Proctor and Gamble Defense Corporation.

## MISSOURI

**Railroad**—Interstate Commerce Commission approved application of Wabash Railroad Co., St. Louis, Mo., to purchase 69.75 miles of track from Missouri-Kansas-Texas Railroad Co.; extending from Moberly to Hannibal and includes station buildings and other facilities; line has been operated by Wabash.

**ST. LOUIS**—Building—Carter Carburetor Co., has \$20,000 permit for construction of a two-story brick building.

**ST. LOUIS**—Building—General Cable Corp., has a \$240,000 permit for two-story fireproof service building of brick construction.

**ST. LOUIS**—Equipment—Defense Plant Corporation has authorized an increase in its contract with White-Rodgers Electric Co., St. Louis, to provide additional equipment at a

plant in St. Louis, at a cost of approximately \$100,000 resulting in an over-all commitment of approximately \$360,000.

## NORTH CAROLINA

**CHARLOTTE**—Cold Storage—J. A. Jones Construction Co., has contract at \$29,870 for cold storage building; Standard Ice & Fuel Co., owners.

**CHARLOTTE**—Expansion—Duke Power Co., purchased former Magnolia mills property for future expansion.

**CHARLOTTE**—Expansion—Standard Ice & Fuel Co., 700 W. 9th St., completed plans for expansion of cold storage plant; cost, \$100,000.

**CHARLOTTE**—Warehouse—Southeastern Construction Co., low bidder at \$31,000 for storage warehouse for American Bakeries Co.

**HENDERSON**—Locker Plant—Arthur H. Surprise, Sec., of Chamber of Commerce, interested in erection and equipping freezer locker plant; \$40,000.

**HIGH POINT**—Ice Cream Plant—S. D. Gibson, Jr., applied for permit to erect a \$100,000 dairy plant on North Main St.

**HOLLY RIDGE**—Mill—V. O. Radocy of Mt. Airy, connected with Old Fashioned Woolen Mills of that city and others, incorporating company to establish sweater and hosiery mill.

**MOREHEAD CITY**—Ice Plant—E. L. Davis Co., Beaufort, S. C., has contract at \$25,000 for ice plant addition for Carteret Ice Co.

**NORWOOD**—Alterations—George W. Kane, Greensboro, has contract for alterations to mill and addition to office building for Collins-Altkman Co.

**ROCKY MOUNT**—Locker Plant—D. J. Rose & Sons, Rocky Mount, has contract for freezer locker plant for Z. B. Bullock.

**ROWAN COUNTY**—Pilot Plant—Gov. J. Melville Broughton, has asked United States Bureau of Mines to install a pilot plant in Rowan County capable of producing from 15 to 25 tons of sponge iron daily.

**ROXBORO**—Locker Plant—Gordon C. Hunter, Chairman of the Committee investigating the possibilities of frozen food locker system for Person County, cost \$35,000.

**SANFORD**—Telephone—Tramway Mutual Telephone Association, incorporated by W. J. Coggins and Associates; erect and operate telephone line.

**WINSTON-SALEM**—Addition—The Bahnson Co. let contract for addition to factory.

**WINSTON-SALEM**—Addition—R. K. Stewart & Son, High Point, has contract for addition to branch plant of Swift & Co.

## OKLAHOMA

**OKLAHOMA CITY**—Wells—Peppers Refining Co., starting work on the natural gasoline plant for the tri-county West Edmond Field, capacity 10,000,000 cu. ft. of gas daily; portions of the gathering system have already been laid in the field; also has under construction an office building near the plant; contemplates construction of several homes for the employees.

## SOUTH CAROLINA

**ANDERSON**—Shirt Plant—Anderson Shirt Co., leased building on E. Market St., installing machinery for manufacture of shirts.

**BLACKVILLE**—Factory—The Goodall Company, Barnwell, plans establishing branch factory in Blackville.

**GREENWOOD**—Addition—Henry B. McCoy Co., Greenville, has contract at \$14,800 for bakery addition for J. B. Carr Biscuit Co.

**LEXINGTON**—Addition—M. B. Kahn Construction Co., Columbia, has contract for addition to power house for South Carolina Electric & Gas Co.

**MONCKS CORNER**—Building—South Carolina Public Service Authority has found it necessary to expand plans for building to house their main offices; larger building now being constructed will cost \$115,000 instead of \$67,000.

## TENNESSEE

**COPPERHILL**—Earth Dam—Ledbetter & Johnson, Rome, Ga., has contract for earth dam, concrete gates, etc., for Tennessee Copper Co.

## TEXAS

**Repeater Stations**—O. V. King, Colorado City, has contract for repeater stations at Happy, Post and Hermleigh for Southwestern Bell Telephone Co., Dallas.

**AMARILLO**—Expansion—McKenzie Construction Co., San Antonio, has contract for enlarging plant for Certaintead Products Corp.; will include new shell loading line and increasing capacity of 3 existing lines; cost approximately \$5,000,000.

**DALLAS**—Electric—Dallas Power & Light Co., plans enlargement of Mountain Creek plant by installation of a 30,000-kilowatt turbo-generator at cost of \$2,750,000; turbo-generator is now being constructed, installation will be completed toward the end of 1945.

**DE LEON**—Plant—Ross & Thiebaud having plans prepared by Thos. D. Broad, Burt Bldg., Dallas for erection of frozen food locker and processing plant.

**EDINBURG**—Addition—Edinburg Citrus Association, has plans in progress for addition to packing plant.

**FORT WORTH**—Factory—Thomas S. Byrne, has contract for factory for Erwin Manufacturing Co.; cost \$31,000.

**FORT WORTH**—Outside Utilities—O. J. Parrott, Dallas, low bidder at \$47,162 for certain outside utilities for Consolidated Bomber Plant.

**FORT WORTH**—Plant—P. O. B. Montgomery, Dallas, has contract at \$167,300 for erection of plant for Hobbs Manufacturing Co.

**GALVESTON**—Plant—Central Dairy Products Co., Oklahoma City, plans establishing ice cream plant.

**GOLDTHWAITE**—Plant—Mills County Locker Corporation having plans prepared by Thos. D. Broad, Dallas, for frozen food locker & processing plant.

**HARLINGEN**—Packing Plant—Stuart Farms Citrus Packing Plant, rebuild packing plant.

**HARLINGEN**—Terminal—Arroyo Colorado Navigation District, c/o C. H. Purdy, chairman, plans expending \$300,000 for dock and terminal facilities.

**HOUSTON**—Abattoir—Pauly Packing Co., will let contract for abattoir.



**HOUSTON**—Plant—J. F. Pritchard & Co., has contract for reconversion of the butadiene plant of Eastern States Petroleum Co., for manufacture of aviation gasoline; change approved by the Defense Plant Corporation; contract price, \$200,000.

**HOUSTON**—Addition—L. O. Stocker Co., has general contract for plant addition, for Gaylord Container Corp.

**HOUSTON**—Addition—W. S. Bellows Constn. Co., has contract for masonry and steel building to facilitate production of war material in joint contract with Sheffield Steel Co., Reed Roller Bit. Co. and Hughes Tool Co.

**HOUSTON**—Addition—R. C. Paul, has contract for addition to plant for Murray Rubber Co.

**HOUSTON**—Cold Storage—B. W. Holtz, has contract for cold storage building, Sea Food Co.

**HOUSTON**—Packing Plant—Pauly Packing Co., plans erection of \$110,000 packing plant.

**HOUSTON**—Plant—W. S. Bellows Construction Co., has contract for erection of \$600,000 plant to process vitamin-retaining rice for Defense Plant Corp. to be operated by Converted Rice.

**HOUSTON**—Chemical Plant—C. F. Braun & Co., has contract for constructing an allyl chloride and allyl alcohol plant for Shell Oil Refining Co.

**HOUSTON**—Plant—A. G. McKee Co., Houston, prime contractors, will construct slag crushing plant; steel and reinforced concrete; to be built at Sheffield Steel Company plant.

**HOUSTON**—Plant—Defense Plant Corp. closed contract with Cameron Iron Works, Inc., to provide equipment at plant; cost \$40,000.

**HOUSTON**—Shop Addition—Mosher Steel Co., has contract for furnishing and erecting steel building at cost of \$30,000 for Reed Roller Bit. Co.

**MARSHALL**—Radio Station—Marshall Broadcasting Co. applied to Federal Communications Commission for permission to establish a 1450 kilo-cycle, 250-watt standard station.

**MCALLEN**—Addition—McAllen Citrus Association, construct packing and processing plant; install new sterilizing equipment; cost \$75,000.

**MCALLEN**—Factory—R. B. Suttle, erect factory; owner builds.

**MCGREGOR**—Expansion—Bluebonnet plant of ordnance works, operated by National Gypsum Co., plans \$3,000,000 expansion program.

**NEW BRAUNFELS**—Extension—New Braunfels, Textile Mills, plans constructing new building housing 116 looms, cost, \$48,000.

**SAN ANTONIO**—Machine Shop—Acme Wire & Iron Works, San Antonio, will construct one story, structural steel frame, concrete floor, cost \$14,000.

**SAN JUAN**—Addition—Winn-Beckwith Co., construct addition to packing plant.

**SHERIDAN**—Plant—Petroleum Engineering, Inc., Houston, has contract for erection of cycling plant near Sheridan, Colorado County, for Shell Oil Co., Inc.; initially plant will have daily capacity of 100,000,000 cubic feet of gas.

**TULIA**—Rural Lines—Taylor & Montgomery, Lubbock, has contract at \$56,249 for rural electric lines.

**WACO**—Equipment—Defense Plant Corporation, authorized acquisition of equipment for plant at Waco; cost, \$1,500,000; facilities will be leased to General Tire & Rubber Co., Akron, Ohio.

## VIRGINIA

**ALEXANDRIA**—Shop—Brice Building Co., Birmingham, Ala., has contract at \$100,000 for constructing Diesel locomotive shop for Southern Railway System.

**ALTAVISTA**—Textile Plant—Pacific Mills of Boston, Mass., purchased 600 acres south of Altavista between Sycamore Creek and Staunton River for erection of textile mill; post war.

**BUCHANAN COUNTY**—Branch Line—Norfolk & Western Railway Co., Roanoke, have made arrangements with contractors already employed on work, Perkins-Barnes Construction Co., Inc., Blackstone, Va., to complete grading and masonry, on proposed branch line in Buchanan County on Levisa River; company granted permit by I. C. C. to extend Lev'sa Branch down Levisa River approximately 9 miles and a spur up Big Creek about 2 miles.

**FRONT ROYAL**—Plant—General Chemical Co., a subsidiary of Allied Chemical & Dye Corp., announced that construction of a new chemical plant will start this month at Front Royal; it is a Defense Plant Corp. facility; cost to exceed \$1,000,000.

**HERNDON**—Lockers—Country Life Frozen Food Lockers, will establish frozen food lockers.

# —Industrial News

## R-W Represents Crosley in Central Virginia

Appointment of the Richardson-Wayland Electrical Corporation of Roanoke, Va., as distributor for The Crosley Corporation in Central Virginia has been announced by B. T. Roe, Crosley manager of distribution. The Richardson-Wayland Electrical Corporation was organized by J. M. Richardson 33 years ago. It was started as an electrical contracting business and from time to time various nationally advertised brands of electrical appliances were added. The company is just now entering the wholesale distribution field.

## Long-Life Truck Storage Battery

A new industrial truck storage battery with 30% longer life has been announced by M. W. Heinritz, vice-president in charge of the storage battery division of Philco Corporation. Named the "Philco Thirty," this battery is said to incorporate a revolutionary new principle of fabricated glass tape mats insulation which greatly lengthens the efficient service life of the battery's power-producing positive plates.

As explained by Mr. Heinritz, "In our new 'Philco Thirty' we have replaced glass mats with a jacket of glass tape insulation which completely encases the positive plates. The tape is wrapped around the plates in a double layer, one horizontal and the other vertical, both with ample overlap to assure a homogeneous film."

"Even a single layer of this glass tape has been found to have better retentive power in holding the active material in the plate, than the standard glass mat. Moreover, by completely encasing the grid frames, the rate of peroxidation of these grids is materially decreased. In both respects, battery life is lengthened."

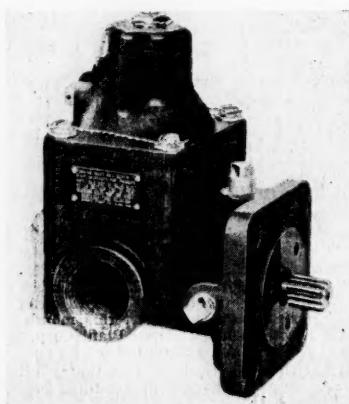
"Naturally such a major change in battery construction as this has had to prove itself not only in the laboratory, but in actual field service. Indeed, our tests of the 'Philco Thirty' in industrial trucks and in other motive power applications have been going on continuously since 1938, and in our laboratories since 1936."

"For the postwar period, when keen competition will demand production at lower cost, we believe materials handling men will especially welcome the greater economy of the new 'Philco Thirty.' At present, this new battery is available in certain sizes and limited quantities. But with the easing of war-time restrictions our line will include types and sizes for all battery powered industrial truck equipment."

## Romec Announces Power Pump

Romec Pump Co., 114 Abbey Rd., Elyria, Ohio, has brought out a new lightweight, high-pressure, engine-driven gasoline pump. Originally designed for aircraft, it is adaptable to other applications for liquid handling. Although weighing only 2 3/4 pounds, the Romec pump can deliver 400 gal. per hour at 2,500 rpm, at pressures ranging from 6 to 35 pounds. P. S. I. Precision built with balanced type relief valves and low temperature shaft seals, it is designed to withstand extreme temperature ranges.

### Romec Fuel Pump



## Mt. Vernon Car Enters Oil and Gas Field

Mt. Vernon Car Manufacturing Co., a division of H. K. Porter Co., Inc., of Pittsburgh, Pa., has completed drilling its first well at Zanesville, Ohio, resulting in production of 1,000,000 cubic feet of gas per day.

Mt. Vernon Car Manufacturing Co., one of the largest independent freight car manufacturers in the nation, has an active drilling campaign in Ohio, and is also drilling on its Mississippi timber land in Smith and Covington counties, Miss., in the heart of the present Mississippi oil activity. This timber land lies directly between the newly-discovered Heidelberg pool and the recently completed 63,000,000 cubic foot Sid Richardson gas well.

The well, Carpenter No. 1, in Morgan county, Ohio, is an important outpost well in the large holdings of the company in this county.



**B. F. Goodrich Company officials examine the first batch of natural rubber extracted from Russian dandelions known as "Koksaghyz." The new rubber is said to be comparable to the best pre-war Malayan grades.**

## Bendix Will Enter Home Radio Field

Bendix Radio Division of Bendix Aviation Corporation, one of the world's largest manufacturers of radio, radar and other communications equipment for aircraft and military uses, will for the first time manufacture and market a line of home radio sets as soon as the military situation permits, it was announced in Baltimore recently by Ernest R. Breech, president.

The home radio production will mark Bendix Aviation Corporation's first entry into the consumer manufacturing field. Home radios will be manufactured in the company's plants in Baltimore where more than 70 percent of the highly precise radio equipment required and used by American and world airlines was being produced before the outbreak of the war.

## W.P.B. Cuts Aluminum Output

With ample supplies of aluminum ingot on hand for both military and essential civilian production, the War Production Board has ordered further cutbacks in output of the light metal. The plants affected by W.P.B.'s decision are the Government-owned facilities in Spokane, Wash.; Los Angeles, Calif.; Troutdale, Ore., and Jones Mills, Ark.

In addition, it was learned that the Aluminum Company of America will reduce production in its own plants at Alcoa, Tenn.; Badin, N. C.; Massena, N. Y., and Vancouver, Wash. This is in accord with Alcoa's contract with the Defense Plant Corporation, which provides that when production in Government-owned plants should reach the present level, further curtailments would be divided between DPC and Alcoa plants. Less than 1,000 workers will be affected by the reduced schedules announced today.

## Steel Statistics

The Thirty-second Annual Statistical Report, by American Iron and Steel Institute, carries numerous new tables and data not heretofore available, showing consumption of coal, fluxes, fuel oil, natural gas, tar and pitch, and electric power by the steel industry. In addition there is considerable information on the iron and steel industry in Canada and some other foreign countries.

It is revealed in the report that production of pig iron and ferro alloys in 1943 was 96.4 per cent of capacity, while production ingots for steel and castings were turned out at 98.1 per cent of the industry's capacity.



## Southern Skies

**SOUTHERN** skies are seldom silent. Growing swarms of fighting aircraft roar into the sky from giant factories, newly-erected in the power-rich South. Busy trainers carry future aces high into sun-warmed skies where they swoop and circle endlessly. Undreamed-of power fills southern skies.

But southern air power was not born with World War II. For Delta Air Lines gave the South time-saving air transportation as early as 1929. And Delta service has been made swifter and more luxurious each year. Though continuing to provide essential

air travel, Delta's wartime expansion has naturally been devoted to the needs of the armed forces.

When Southern-trained men and southern-built planes have helped restore Peace, Delta's plans to give the South great commercial air power can be realized. For the South, with its vast resources, new factories and abundant skilled manpower, will be called upon to contribute much to U. S. postwar prosperity. And the South will be the natural gateway through which the great, expanding volume of Latin-American travel and commerce will flow.

THE AIRLINE OF THE SOUTH... SERVING A LAND OF POWER AND PROMISE

### DELTA Air Lines



# Business Briefs

**GENERAL.** Peacetime consumption of goods two-thirds to three-fourths above the 1935-39 average is necessary "if all the people who want employment are to have it after the war." : a WPB v.p.

Selective Service spokesman says a returning veteran "is entitled to his old job back even though he displaces a man with greater seniority." Union leader Reuther argues the law only gave veterans "like seniority" not "super-seniority." Debate settled nothing. An employer's financial position cannot be considered in determining wartime wage rates, says WPB: "would defeat wage stabilization and make a nullity of the Congressional policy."

Wholesalers (\$55 billions) out-do retailers (\$42 billions) in average annual sales: 1939 Census of Business. Consensus among war contractors gives 80 to 94 percent of their work as the part becoming scrap the moment contracts are terminated. Since first termination (June, 1942) there have been about 6,000 total or partial terminations.

*WPB Priorities Regulation No. 25 permits its field offices to authorize the manufacture of civilian type products under specific conditions; a plan to decentralize operations.*

Adjustment of 702 cases from January 1 to June 30 made by President's Committee of Fair Employment Practice. Surplus War Property Administrator Clayton defended his policies before Senate's War Investigating Committee. Senate wants 8-man board to handle war property, House says 1-man head better. Minds met, got nowhere. U. S. still owns some of the housing built 26 years ago by the Housing Corp.

From WPB: overall manpower needs will be down another 300,000 by 1945 whether Germany cries uncle by then or not. War production needs only 100,000 of the 700,000 already released from munitions factories, figures Nelson. Service procurement men nevertheless want no shortages in anything. Restrained name-calling indulged in, later came reconciliation. War production doing all right.

*Bowles of OPA predicts "many, many," relaxations within a year of Nazi kamerad, does not know when rationing will end.*

Physical volume of business (Barron's Index, mid-August) was at 130.9, was 146.7 a year ago. Chairman McNutt, WMC, applied pressure to its major programs, mainly priority referral; wants an even greater concentration of available

labor in urgent war production. Department of Labor: Investment in 338 privately-operated government-owned plants added up to \$7.9 billions, divided thus: chemical and allied products, \$2.8 billions; transportation equipment, \$2.49 billions; iron and steel, \$1.22 billions; non-ferrous metals and products, \$0.84 billions; others, \$0.569 billions.

Net working capital of American corporations (March 31) was highest ever, \$43 billions against \$41.6 billions for January 1. Securities and Exchange Commission figured it out. \$400 million in surplus war goods have already been sold by the U. S. Sales now run about \$25 millions weekly.

*U. S. shoppers have money, spend it. Retail sales for the first half of 1944 totaled \$32.1 billions, 8 percent above a year ago; \$63.8 billions went over retail counters in 1943; both are records.*

**AGRICULTURE.** All items added in, 1944 food production will exceed 1943 by about 3 percent, say well-posted guessers. Little change in the food situation is expected in the first few months following



Nazi capitulation. Government guarantee of 90 percent of parity is relied upon to keep prices calm.

A proposed "Food and Agriculture Organization of the United Nations," growing out of the United Nations Food Conference of a year ago and modeled somewhat on the International Labor Organization, would do research, make suggestions. Goal: to keep all the nations well-fed and amiable.

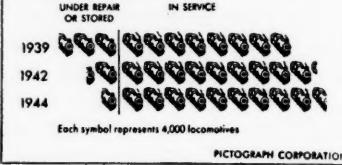
*Less meats but more fruits, vegetables and cereals are in prospect for civilians during this Fall and Winter, says the stoical Agriculture Department. Livestock production will drop 8 to 10 percent; food supplies in general will be ample.*

The Administration wants extra funds from Congress to support major farm products at parity levels, Alabama Senator Bankhead doing most of the spadework. He is talking up a 97½ to 100 percent cotton loan. Senate tentatively fixes it at 95 percent.

Plush Waldorf-Astoria luncheon had fresh fruits and produce. What made it news: they were picked the day before on Pacific coast, rushed by air. South closer than Sacramento valley.

*Senator Bankhead wants cotton parity fixed at from \$6 to \$8 per bale above the 1944 loan rates of the Commodity Credit*

## MORE LOCOMOTIVES IN SERVICE



*Corp., also sponsored and got an agreement whereby no Government cotton would be released at less than parity plus 50 points or about \$2.50 per bale higher than recent figures.*

Foreign cotton plantings and synthetic fibres give some circles pessimistic notions about cotton's prospects in late post-war years. Domestic consumption is currently running about 11 million bales; but post-war foreign sales are expected to fall below 2 million bales, cutting a large slice off present disposals.

*Total domestic supply of all cottons is estimated at 10,727,000 bales at the past season's end, 58 percent of the end-July total stock being in government hands.*

Department of Agriculture thinks 11,022,000 bales (500 lbs. gross weight each) about right as a 1944 crop guess, 405,000 bales less than 1943 and 1,433,000 less than the average over the 1933-32 period.

1944 acreage for harvest is estimated at 20,081,000, smallest since 1895. 1944 yield of cottonseed should be around 4,572,000 tons. 46.1 percent of the present acreage receives fertilizer (average: 328 lbs. per acre when used, cost \$5.70 per acre).

Farm milk production totaled 61.7 billion pounds during the first half of 1944, about the same as for the first half of 1943. Milk farmers got from wholesalers prices from 7 to 28 cents per hundred-weight above those paid in early 1943. At 194, the index number of prices received by farmers for dairy products was at the highest mid-July level in 35 years.

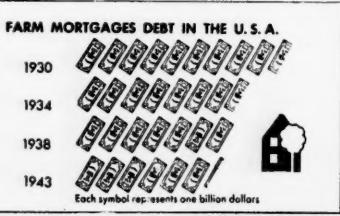
*Milk production per cow in herd on July 1, 1944, was 16.89 pounds, 4 percent below last year.*

Ceiling prices for the 1944 crop of farmers' stock peanuts are set forth in OPA's Amendment 5 to Revised Maximum Price Regulation No. 335, effective Aug. 28.

*Packers of dried fruits continue to set aside their packs of certain fruits for government purchase during the 1944-45 marketing season.*

Packers of cucumber pickles and cucumber pickle products must set aside for the Army 25 percent instead of the former 40 percent of their pack. An estimated 36 million gallons will be packed during the 1944-45 season.

Maximum prices for 1945 United States No. 1 Early White Potatoes, sacked and loaded on carrier, f.o.b. country shipping point, range over the season (March 31-June 30) from \$2.40 to \$3.95 per 100 lbs. (Continued on page 62)



# "LET 'ER GO!"

Over the telephone he directs the firing of big guns on one of the fronts. This is a vast war and communications are vital.

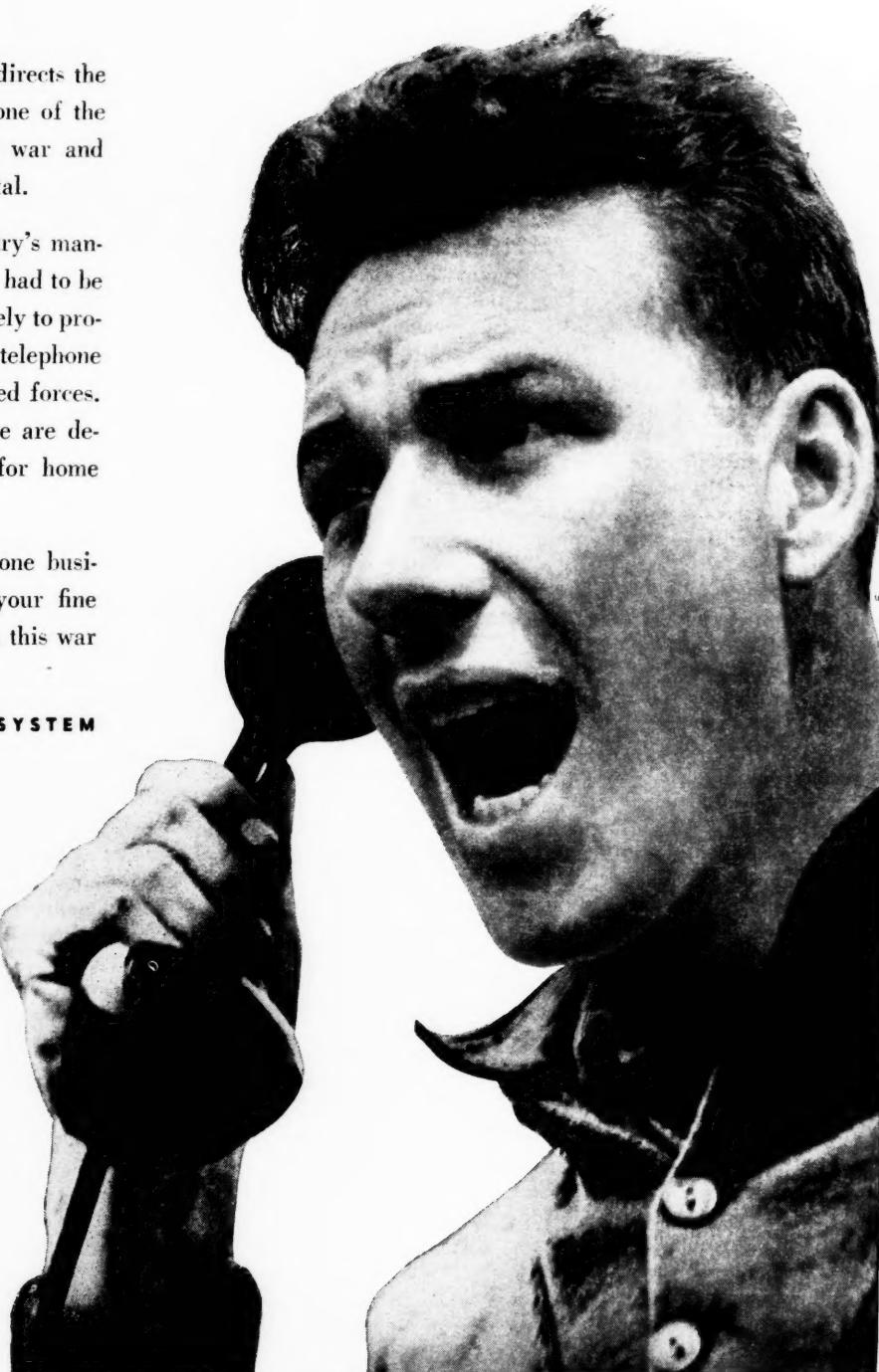
So the telephone industry's manufacturing capacity has had to be devoted almost exclusively to producing electronic and telephone equipment for our armed forces. That explains why there are delays in filling orders for home telephones.

All of us in the telephone business are grateful for your fine spirit of co-operation in this war emergency.

#### BELL TELEPHONE SYSTEM



Please try to keep the Long Distance circuits clear from 7 to 10 each night for the service men and women.



The big guns start booming when the section chief of a cannon company gives the order to "fire"

# Reynolds to Repackage for Navy at Hopewell

One of the most important new war plants in Virginia is beginning to process and repack large quantities of military equipment and material for overseas shipment. J. Louis Reynolds and Walter L. Rice, vice presidents of United States Foil Company, announces.

U. S. Foil, an affiliate of the Reynolds Metals Company, has been awarded a contract with the Supply Department of the Navy to operate the plant at Hopewell, Va., and three large buildings have just been leased from the Tubize Rayon Corporation. Full operation is anticipated by October.

Orville K. Schmied, general manager of Richmond plants for Reynolds Metals, will supervise the Hopewell operations, and Hugh C. Lawson, former production manager for Curtiss Wright Aircraft Corporation, will serve as plant manager.

The plant acquired by the U. S. Foil Company under a long term lease for the repackaging plant carries a combined floor space of more than 200,000 square feet or nearly five acres. Items from needles to jeeps will be packaged; some in small boxes, others in large crates.

It was believed generally that the Hopewell plant will be among the first—if not the first—large plant of its kind for over-seas repackaging in the nation. The need for such a factory was emphasized recently by Under Secretary of War, Robert P. Patterson, who revealed that substantial quantites of equipment had arrived over-seas in virtually useless condition because of corrosion due to inadequate protective packaging.

It also was presumed that a substantial portion of the packaging operations at the new Hopewell plant will utilize a material developed by Reynolds Metals in co-operation with military authorities over the past few years. This material features composition foil, laminated to Kraft paper and a heat sealing film to make packages airtight and watertight. The Special

Award for War Packaging was recently granted the company for its development and perfection of this material.

Mr. Reynolds and Mr. Rice indicated that this type of centralized processing and repackaging will be used extensively after the war, and that said U. S. Foil Company is greatly interested in bringing new industries to Virginia.

Most of the engineering work for the installation of equipment in the plant has already been completed under the direction of C. Davis Blackwelder, vice president in charge of engineering.

It is understood that the program will be carried out under the direction of Admiral M. G. Slarrow, of the Naval Supply Depot, Norfolk, and Lt. Comdr. W. E. Kress. The contract was signed by Comdr. Fred W. Schoew, contracting officer of the Naval Supply Depot, and Walter L. Rice, vice-president and general counsel of United States Foil Company.

The lease was negotiated on behalf of Tubize Rayon Corporation by H. Weisler, manager, and Dave Harrison, counsel for the company, and the contract was signed by the company's president, J. E. Bassill.

United States Foil Company owns the majority of the common stock of Reynolds Metals Company, which operates more than 40 plants throughout the United States. United States Foil Company also has the controlling interest in Reynolds Corporation, which operates two large Navy ordnance plants in Georgia; and Reynolds Research Corporation, which operates a munitions container plant in Louisville. It also controls Eskimo Pie Corporation, Frozen Products, Inc., and Reed Company, Inc., the latter being engaged in the manufacture and licensing of machines for packing milk in cartons.

With its new operations United States Foil Company will resume its function as an operating company.

The various companies in the

group carry on a wide variety of manufacturing operations, including the manufacture of aluminum metal and fabrication of aluminum sheet, rod, extrusions, foil and forgings.

Reynolds Metals Company operates three aircraft parts plants in Louisville. Its general headquarters are in Richmond, Va., where it manufactures aluminum foil. Additional products produced and distributed by the group of companies include thermostats, thermometers, central devices for airplanes, ships, trucks, tanks, automobiles and stoves, foil insulation, cotton insulation, labels, embossed products, packaging material and bags, cartons, fuses, boosters, bombs and a great variety of metal products. Aggregate sales in 1943 exceeded \$214,000,000. The total number of employees exceeds 32,000.

## Kingan Meat Packing Plant Dedicated in Florida

Nearly 1,000 persons attended the barbecue given in August by Kingan & Company for cattlemen of Florida celebrating opening of the company's new meat packing and processing plant located about three miles south of Bartow on the Fort Meade highway.

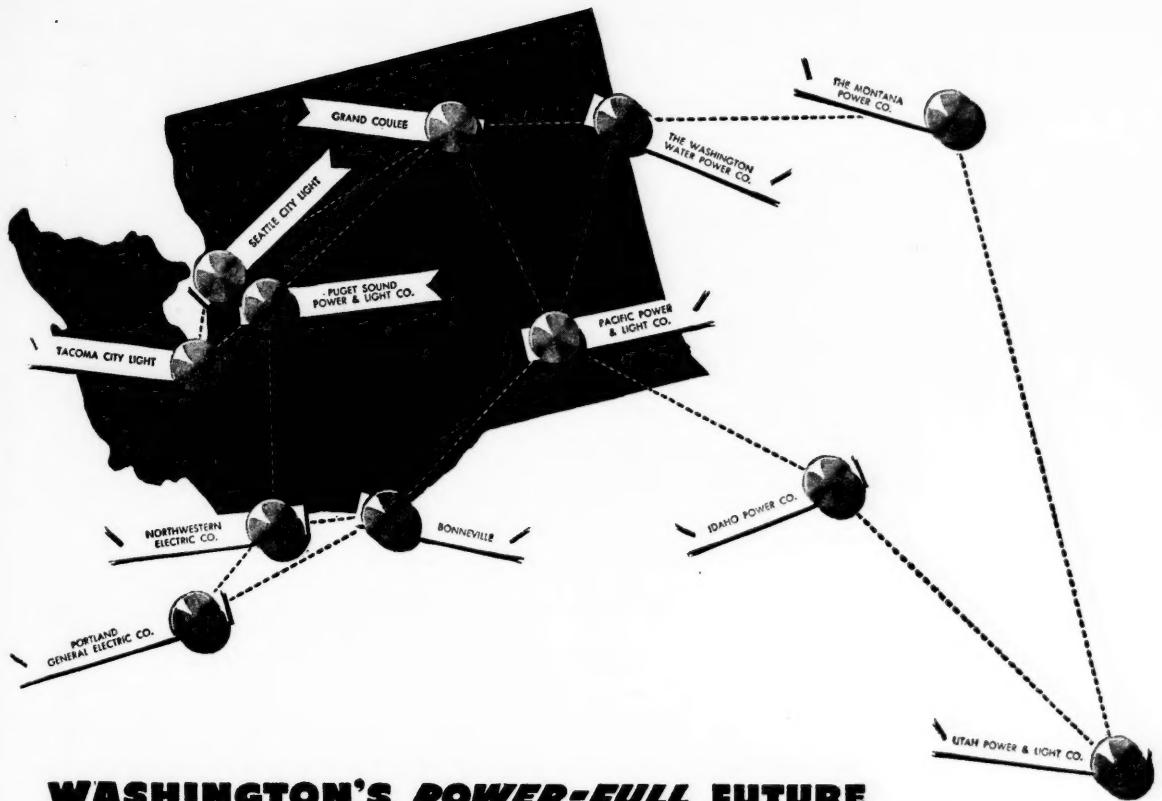
Included among those present were many cattlemen, state and agricultural agents, representatives of Kingan & Co., a representative of the Governor and a large number of business people from Bartow.

Short welcome talks were made by Mayor-Commissioner C. E. Williams, P. E. Williams, Davenport, president of the Florida State Cattlemen's Association; County Farm Agent W. Paul Hayman; Foy E. King, manager of the local Kingan plant, and P. L. Robertson, head of Kingan's beef department.

Following the barbecue and short program, those invited were invited to make a trip through the local plant which is capable of handling 18,000 cattle annually as well as 8,000 calves in season.

The plant has a 20 foot hard surfaced road leading from the highway to the big parking lot provided for customers and visitors. A 30-foot runway leads the way from main building to the cattle pens and a 40-foot paved roadway leads to

(Continued on page 74)



## **WASHINGTON'S POWER-FULL FUTURE**

### *...the Northwest Power Pool*

The swift waters of Northwest rivers provide the State of Washington with phenomenal amounts of cheap electric power for industry. Potentially this area will produce more and cheaper hydroelectric power than all of the rest of the United States combined! Thanks to the Northwest Power Pool (composed of the principal private, municipal and federal electric systems, all interconnected), power is being delivered now where it is needed most! Great electrochemical and electrometallurgical industries are already operating . . . aluminum, magnesium, special steel alloys, calcium carbide, and wood-products and smelting plants, all requiring large amounts of power. After the war the Northwest Power Pool may well serve the peacetime power needs of thousands of new industries locating plants in the State of Washington. Cheap power beckons industry westward!

## **WASHINGTON** *The New Cornerstone*

NORTHWESTERN ELECTRIC COMPANY  
PUGET SOUND POWER & LIGHT COMPANY  
PACIFIC POWER & LIGHT COMPANY  
THE WASHINGTON WATER POWER COMPANY

Business-Managed Electric Companies, Serving Low Cost Electricity to More Than 370,000 Homes, Farms, Businesses and Industries in the State of Washington.

#### **WASHINGTON—THE STATE—HAS**

#### *Everything!*

- • • • •
- **ABUNDANT, CHEAP HYDROELECTRIC POWER FOR INDUSTRY**—vast, interconnected hydroelectric systems.
- **GATEWAY TO THE GREAT POSTWAR PACIFIC MARKETS**—the Orient, Alaska, Russia, Canada, South America.
- **IMMENSE SOURCES OF RAW MATERIALS**—minerals, timber, fuels, water power, etc.
- **SKILLED LABOR**—intelligent, responsible, fair in its dealings with management.
- **PLEASANT LIVING**—a temperate, healthful climate, ideal for both working and living.
- **DIVERSIFIED AGRICULTURAL PRODUCTION**—fruits, grains, livestock, vegetables, dairy products.
- **UNEXCELLED TRANSPORTATION FACILITIES**—by land, sea and air . . . in all directions . . . deep-water harbors.
- **LOW TAXES AND CONSERVATIVE FISCAL POLICIES**—definite, statutory limit on property taxes . . . no state income tax . . . no general obligation debt.
- **INDUSTRIAL SITES AND HARBOR FACILITIES**—abundant industrial building sites on harbors, trackage and highways; available dock, terminal and warehouse facilities, anchorages, etc.
- • • • •

## TRADE LITERATURE

### "SAFETY SUBJECTS" NOW AVAILABLE

The U. S. Department of Labor's Division of Labor Standards has announced the publication "Safety Subjects," a revision of Blake's "Industrial Safety Subjects." The new bulletin contains the entire 25 monographs, revised and brought up to date. Copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for 20 cents a copy with a discount of 25 percent on lots of 100 or more. Orders accompanied by the remittance should be sent directly to that office.

### NEW CEMENT PLANT BULLETINS

Two new bulletins describing portable cement plants have been issued by the C. S. Johnson Company of Champaign, Ill. Written concisely, they summarize operating features, and the uses of each type of plant, together with general specifications. Copies of these are available to contractors, dealers, concrete products, and ready-mixed concrete producers on request to the manufacturers.

### METAL CONVEYOR BELTS

Cyclone Fence Division of American Steel and Wire Co., Waukegan, Ill., has recently issued a new catalog, No. 3, illustrating various uses and applications of Cyclone chain link belts. Address them direct for copy.

### LIQUID DISPENSING EQUIPMENT

Bowser, Inc., Fort Wayne, Ind., manufacturers of liquid storage handling and dispensing equipment for industry, has issued a new booklet illustrating various pieces of equipment for the handling of liquids. Pumps, portable dispensers, barrel draining devices and metering units are illustrated with complete specifications.

### MANUAL ON WAR PACKAGING

A revised manual on the protection of war materials has been issued by Sherman Paper Products. In it are included digests of government specifications, with an expanded section on the protection of metal products. Method IA, which has gained rapidly in use, is described in greater detail, illustrated with a comprehensive set of photographs. Included, too, is a new cushion-wrapping method, also illustrated photographically in step-by-step sequence; there are over 125 photographs. Copies of this newly revised manual can be obtained without charge, from Sherman Paper Products Corp., Newton Upper Falls, Mass.

### SAFETY AMONG EMPLOYEES

A new report, "Developing Safe Employees," based on accident-prevention activities of a number of industrial organizations, has been issued by the Safety Bureau of the Metropolitan Life Insurance Co., 1 Madison Ave., New York 10, N. Y. Interested executives may address the company direct and receive a copy.

### TOOLING GUIDE BOOK

"How to Machine Parts on Turret Lathes," a tooling guide book for lathe operators, has been published by the Operators Service Bureau of Warner Swasey Co., Cleveland, Ohio, makers of turret lathes. The guide book condenses in simplified and well-illustrated form specific directions for performing all types of turret lathe work. Turret lathe operators may secure a copy, direct, at a nominal charge of 50 cents.

### PRECISION PUBLICATION AVAILABLE

With its current issue No. 105, the George Scherr Co., 200 Lafayette St., New York 12, N. Y., has resumed regular publication of its well-known house organ PRECISE PRODUCTION. This periodical will be issued regularly during the year to provide readers interested in the advancement of precision with news of the greatest accuracy. The latest development in precision manufacturing methods, inspection practices and shop procedure will be covered regularly throughout the year. For a copy of issue No. 105 write direct.

### SPEED PRIME PUMPS

Chain Belt Co., 1600 W. Bruce St., Milwaukee, 4, Wis., has issued a new catalog, Bulletin 447, covering their Rex line of speed prime pumps. Profusely illustrated, the bulletin carries specifications and tables on water friction, suction lifts for various altitudes, and pressure conversion.

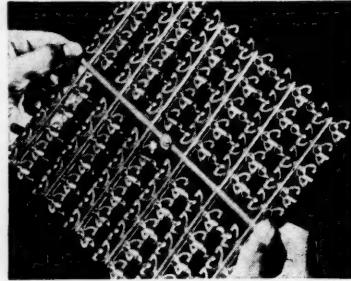
## Momey Merchants

(Continued from page 37)

it is thought, will borrow funds for these purchases rather than realize on their savings or bonds. People will buy on credit as they habitually have done.

The attitude of the larger banks toward agricultural loans is not yet clear. Some bankers have said, however, that farmers have used their current funds, derived largely from favorable price situations, in reducing old debts. The Farmers are expected to borrow for current production in the post-war years on about the scale of pe-war years.

Real estate loans will probably not amount to sizable sums. In most of the larger cities of the South low-rent housing facilities have been expanded considerably. Some cities, the bankers say candidly, are



**Mold used by the Essex Corp., Charlottesville, Va., to make serviceable, colorful pencil ferrules from Tenite.**

already overbuilt, others express a complete dislike for real estate loans.

Early post-war expansion of bank loans is not anticipated by a majority of Southern bankers, but they are taking no chances. They are getting ready for whatever may come and planning so that no sound prospective borrower need be refused because of a shortage of loanable assets.

On the national scene, the Senate Banking Committee was told that War Secretary Stimson, Contract Termination Director Hinckley and Administration Financial Advisor Baruch favored legislation authorizing Federal Reserve Banks to guarantee loans to private business after the war.

Thus, from all sides, comes assurance for the Southern business man who feels he might need to borrow funds to carry on and progress in the post-war period.

## Southern Line Association

Wins ATAE Award

Secretary of Commerce Jesse H. Jones, Chairman of the Jury of Awards appointed by the American Trade Association Executives, has announced the Southern Pine Association of New Orleans as winner of the top award for outstanding achievements by industry during the war years 1943-44. The ATAE Award is usually given annually by a committee of outstanding leaders in government and business, but because of the war, no award was made in 1943 but was consolidated into one representing services and achievements for the years 1943-44.

Acting with Secretary Jones on the Jury of Awards were: Eric Johnston, President of the Chamber of Commerce of the United States; Robert Gaylord of the National Association of Manufacturers; Linwood Noyes of the American Newspaper Publishers Association; and, Franklyn Snyder of North western University.

## Magnolia State Oil

(Continued from page 43)

corresponding period of 1943. In June, 1944, 64 wells were going down in 20 Mississippi counties.

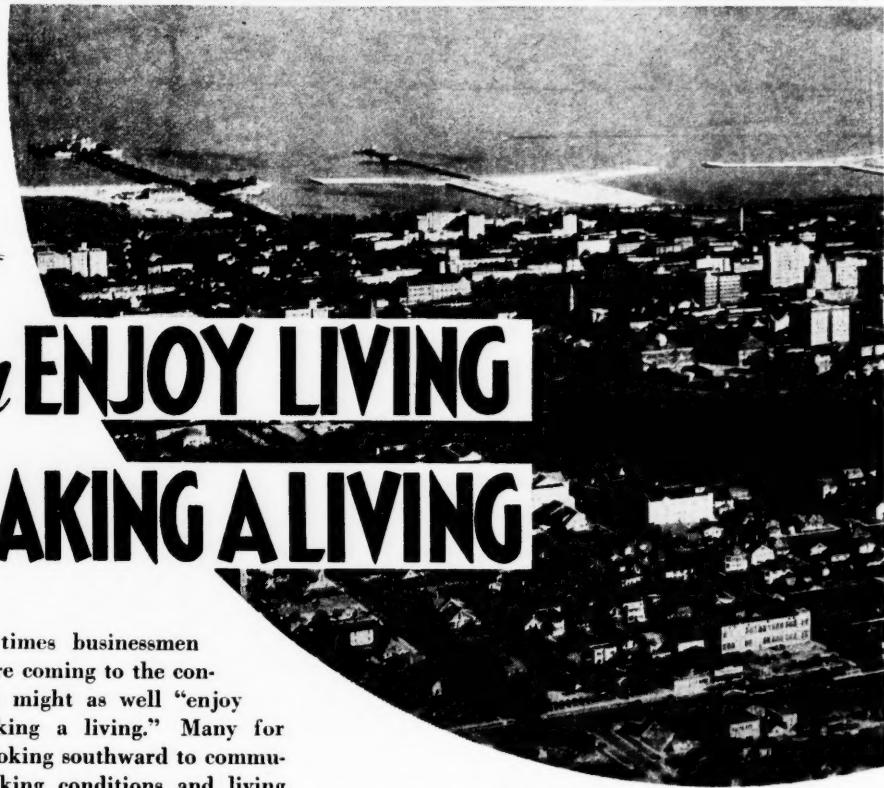
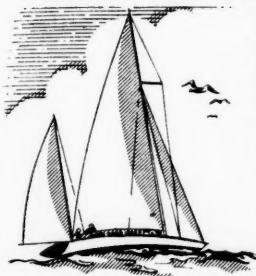
Oil leases in Mississippi now cover more than 8,500,000 acres, 29 per cent of the entire state. Three-fourths of the state is considered to be possible oil territory, while a half of it is well regarded for the accumulation of petroleum in segregated geologic structures.

Mississippi, having the raw materials, wants to realize on the greater revenue to be derived from processing it. The state government's attitude is that this is the important income-creating part. Only one refinery, operated by the Southland Company of Yazoo City, is now located within the state. It processes about 3,500 barrels daily, has 100 employees and a payroll of more than a half million dollars. In total, it has processed over 2,500,000 barrels of crude, sending to the market in excess of 100,000,000 gallons of gasoline.

The \$600,000 plus paid to the state in taxes by the Southland has made Mississippi officials and oil men anxious to have processing of their crude done in Mississippi, but the major oil companies are being coy about erecting refineries there. They apparently have a feeling that when the abnormal wartime petroleum requirements get back to usual levels the present refining capacities will be adequate. Mississippians feel otherwise and present their case forcibly.

In any event, no one, knowing the facts, can deny the presence of oil in promising quantities.

# FOR YOUR POST WAR BUSINESS PLANNING....



*You Can* **ENJOY LIVING**  
**while MAKING A LIVING**

In these trying times businessmen are more and more coming to the conclusion that they might as well "enjoy living while making a living." Many for this reason are looking southward to communities where working conditions and living conditions are more ideal than in many of the large industrial centers.

To such men St. Petersburg, Florida's Sunshine City, extends a special invitation and offers exceptional attractions and advantages. This city, fourth city of Florida, second largest resort center of the South, with 70,000 permanent population and more than twice as much winter population, is at the center of Florida's largest population area. For various types of light industry it offers a

favorable combination of markets, materials, skilled workmen, and superior living conditions with moderate costs.

Both for the businessman and for his employees, St. Petersburg presents nearly all of the factors of good living which one could desire—pleasant year-round climate, moderate housing and living costs, a wide variety of recreation and entertainment, and a truly American atmosphere.

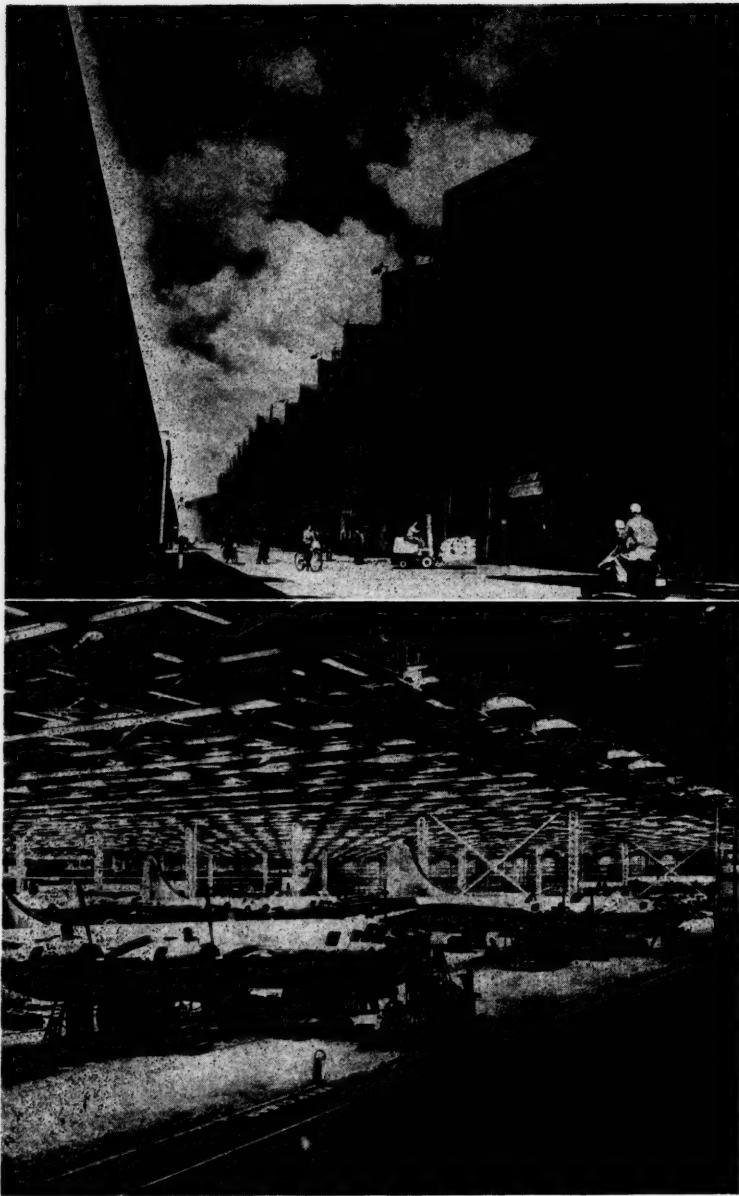


#### WRITE FOR BOOKLETS . . .

It will pay you to investigate St. Petersburg as the location for a branch plant, a new enterprise, or for a Florida distribution headquarters. For booklet "St. Petersburg Invites Industry" and other information address J. M. Davenport, Chamber of Commerce.



**ST. PETERSBURG Florida**  
THE SUNSHINE CITY



**Boeing B-29 Superfortresses move two abreast through three 300-foot wide final assembly bays at the big Boeing-Renton plant. The Austin Company's engineers and builders designed and built the vast steel work which gives more than one million square feet of 300-foot clear span areas.**

#### Bituminous Production Down

For the eleventh consecutive week, the production of war-vital bituminous coal in two important Southern Appalachian mining districts during the week ending August 12 remained below the average weekly output of 3,749,000 tons required to meet all estimated requirements for the current fuel year, according to Solid Fuels Administrator Harold L. Ickes.

Production in the two districts (Nos. 7 and 8, in Virginia, West Virginia, eastern Kentucky and part of Tennessee) in the week of August 12 totaled 3,720,000 tons, in comparison with 3,865,000 tons in the comparable week of 1943. The output of these districts, which produce by-product coal desperately needed for the manufacture of steel and merchant coke,

has exceeded the required average of 3,749,000 tons in only one week since April 1, the start of the current fuel year. The total production of the districts from April 1 to August 12, 1944 was 67,972,000 tons, as compared with 66,363,000 tons mined in the corresponding period of 1943 when mining operations were interrupted and the output reduced by recent strikes.

This year's demand for byproduct coal from these and other mining districts has reached such proportions that it has been necessary for the Solid Fuels Administration for War to order the diversion of 420,000 tons per month until January 1, 1945, from railroads, utilities, and industrial plants using it for steam making, to rebuild the depleted stockpiles of steel and coke manufacturing plants.

#### Bailey Bridges

(Continued from page 49)

bay is a cross-section, the length of a panel, or 10 feet.

A "skeleton nose," the length of which is determined by the class of bridge, is built first and launched as part of the bridge. Then the builders erect the bridge proper. They work in crews, putting into place the panels, transoms, braces, clamps, pine and other parts, as the bridge, in effect, "rolls" across the gap and the "skeleton nose" touches the far shore where other rollers are ready.

When the span reaches the other side, members of the bridge put their shoulders to the structure and shove until the "nose" has cleared the rollers and rests upon them. Trucks are used, if the push is uphill. When safely across, the nose is dismantled, the rollers removed, and the chess, or floor boards, are fastened down by curbing, which also serves to guide vehicles that might suddenly swerve from a straight course. Foot walks, two feet six inches wide are attached to either side.

There is a limit to length of the fixed bridge, because the longer it gets without supports under the center, the less weight it can carry. The floating, or pontoon bridge, solves the problem where longer bridges are needed. Moving sufficient equipment to a bridge site requires a fleet of trucks and trailers. Putting up a 100-foot fixed span would require 17 two and one-half ton trucks and 11 pole-type, two and one-half ton trailers.

Both the Bailey bridge and its production have been secret, but recently military authorities relaxed restrictions to reveal that the Roanoke plant of the Virginia Bridge Co., a subsidiary of the United States Steel Corp., has manufactured the prefabricated units that go into its design. American Elevator & Machine Co., of Louisville, is another southern concern so engaged.

(S. A. L.)

#### Post-War Air Rates to Decline

A decline in post-war air transportation rates, gradual at first and then accelerating, is forecast by Dr. D. H. Davenport, Director of Business Research, Curtiss-Wright Corporation, Airplane Division, Buffalo, N. Y.

Numerous improvements in service, a tremendous increase in air travel, and better equipment also are anticipated by Dr. Davenport in discussion of "The Future of Air Transportation," in which he summarizes the findings made in a study, "Air Transportation in the Immediate Post-War Future," by the Business Research Department of the Curtiss Wright Airplane Division.

Dr. Davenport said it has been estimated that within five years after the war, domestic passenger rates will have declined from the pre-war average of 5.1 cents per mile to 3.5 cents a mile, and express rates from the pre-war 80 cents a ton-mile to 30 cents a ton-mile. Numerous improvements in service may be anticipated to the advantage of passengers and shippers alike, Dr. Davenport pointed out.

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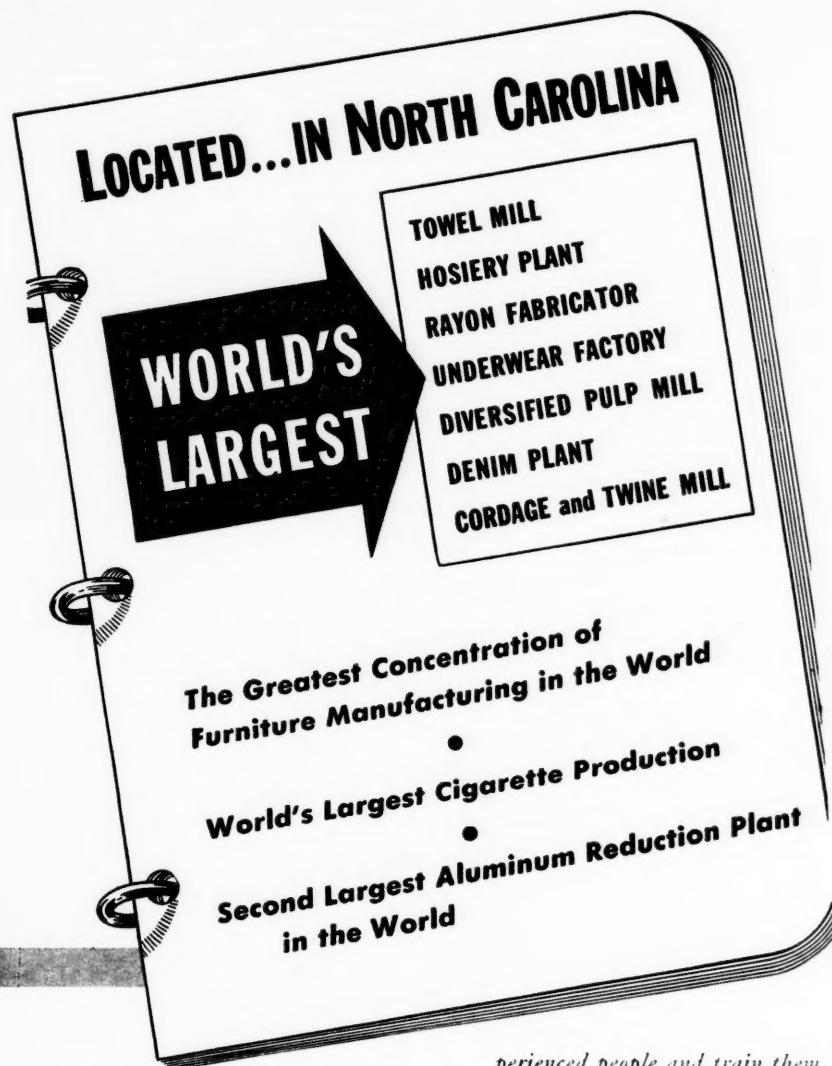
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**T**HESSE industrial firsts did not just happen! They are based upon and grew upon sound economic factors. Industry locates and develops where it has the best opportunities for profitable operation. And, in North Carolina industry finds:

An abundance of raw materials: mineral, forestry and agricultural...plenty of low-cost, hydro-electric power...a mild climate which permits year-round operation...native labor that is willing, intelligent and industrious... all the advantages of a Southern location plus proximity to the richest consuming markets.

A manufacturer who recently established a large plant in North Carolina, wrote: "It was necessary to employ inex-

perienced people and train them. We found that these people were easily trained and showed a high degree of enthusiasm in their work. We have practically no absentee problem. All our workers are exceptionally loyal and vitally interested in the welfare of the company."

The record of North Carolina's industrial growth should be of special interest to Industrialists planning postwar expansion. A staff of trained industrial engineers will supply factual data relating to the opportunities for your specific industry in North Carolina.

Address Commerce and Industry Division, 3249 Department of Conservation and Development, Raleigh, North Carolina.

# NORTH CAROLINA

## Victims of War-Time Neglect



## Business Briefs

*(Continued from Page 54)*

California gets lowest price, Texas highest.  
est.

**Shortages of nitric and sulphuric acid critically needed by ordnance plants, adversely affect production of nitrogenous and superphosphate fertilizers. To offset the growing shortage of nitrogen, approximately 100,000 tons of Chilean nitrate have been assigned for August-September loading.**

**MANUFACTURES.** Steel industry doing well, in first half of 1944 broke many records, i.e., for total production, shipments of plates and 4 other major products, total payrolls, average weekly and hourly wages paid. One day's consumption of raw materials by the wartime steel industry takes enough to load a train of 16,000 freight cars 133 miles long; one day's shipments to consumers would load 4,406 freight cars 36 miles long, totaling 198,282 tons. 45,062,000 tons of steel were produced in the first

half of 1944.

**Bedding manufacturers, says WPB, may hope to find some additional wire for springs.**

Textile men listened, feared he was right, could not like it. Harrison Hightower was telling the Southern Garment Manufacturers Association in solemn conclave that "Lend-Lease is planning to rebuild all demolished cotton mills in foreign countries with new and the most modern machinery." Current Washington thinking on post-war economics is to build up production everywhere, increasing the international flow of goods by the higher purchasing power created. What this will do to our red ink consumption and standards of living was not mentioned, apparently was beside the good neighbor point.

**Total textile production is running about one-third under the 1942 average.**

Cotton fabrics expected to play a big part in the expected transformation of

post-war men's clothing. 70 percent of our spindleage being over 18 years old, textile machinery manufacturers expect a land-office business after the war; wear and tear on equipment has been tough during the emergency. See OPA's Revised Price Regulation No. 208 for revised staple work clothing prices.

American Association of Textile Chemists and Colorists is starting a free personnel service. Director of War Mobilization has turned out a "Standard Sub-contractors Termination Article" telling about the anticipated termination of many government garment contracts when Germany is whipped.

*Army needs duck, so cotton fabrics for inner and outer furniture coverings will be scarce during the rest of the year.*

Hosiery knitters are required to turn over to the Army much more than half their production. If Government textile contracts are cutback or terminated, WPB may, in the case of certain items, grant temporary exemptions from the restrictions of Conservation and Limitation Orders. (See amendments to Conservation Order M-328). American cotton industry needs complete modernization, decided Fifth Annual Cotton Research Conference in Dallas.

*Still no leather for furniture. More softwood needed for crating and dunnage.*

Hardwood production in U. S. in first half of 1944 was 3,614,000,000 board feet; in June was 653,000,000, an increase of 6.2 percent over May. Softwood plywood industry used 4,783,000 lbs. of glue in June, 1944, turned out 129,821,000 square feet (3/8" equivalent) of plywood.

Ceiling prices upped on pulpwood imported from Canada's Quebec, New Brunswick and Nova Scotia provinces. Pulpwood deliveries to U. S. mills from U. S. sources totaled 8,369,000 cords during 1944's first half, 27 percent better than the corresponding period of 1943. South reached a new high in June of 660,000 cords, 50 percent over June, 1943; is only region in which pulpwood consuming mills have sufficient inventories to carry them through the winter. Military requirements of pulpwood, now highest of war, are expected to rise still more.

**OPA ups price of walnut lumber at the mill level (Revised Maximum Price Regulation No. 217).**

Lumber stocks in retail and wholesale yards declined 18.8 percent in first quarter of 1944, 2,401,548,000 board feet being on hand March 31; retail stocks fell off 18.6 percent, wholesale 19.4 percent. South Atlantic region had greatest decline, 29.6 percent; the South had second greatest, 27.2 percent. Lagging lumber production will force a 700-million-foot cut in fourth quarter allocation to industry.

**Navy's 1945 needs in motor graders will be about 75 percent above 1944, the Army's about the same.**

Liquor tax receipts by the Treasury Department for July were \$209,939,483, in July, 1943, were \$125,173,191; taxes on floor stocks and larger domestic and imported spirits made up the extra. 11,680,000 gals. of whisky and beverage alcohol produced in Kentucky during Au-

*(Continued on page 64)*

# FACTORY OWNERS, ATTENTION!

If you are thinking of decentralizing your plant  
or starting a new one,

we have everything you need; a large reservoir of native labor, less than one-half of one per cent foreign born, all usual utilities, three railroads and ten bus lines, cheap power rates, millions of acres of cut-over timber, a good agricultural community and no labor unions. Home of Harding College.

If interested, write for more detailed information to

**E. P. PYEATT, Chairman,**

**White County Economic Council, Searcy, Arkansas.**

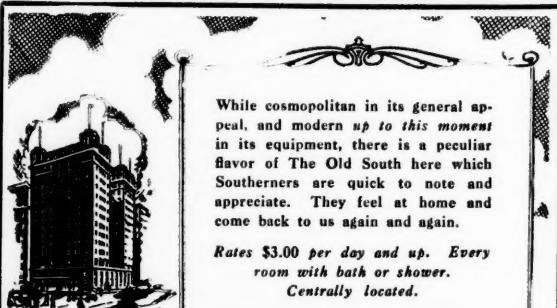
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While cosmopolitan in its general appeal, and modern up to this moment in its equipment, there is a peculiar flavor of The Old South here which Southerners are quick to note and appreciate. They feel at home and come back to us again and again.

Rates \$3.00 per day and up. Every room with bath or shower. Centrally located.

*The Southern Hotel*  
BALTIMORE 2

## For Your Southern Plant **ORLANDO**

Greater Orlando, which is now a community of more than 60,000 population, offers exceptional advantages for new industries and branch plants of already established industries and for distribution offices for Florida and the southeast. Located in the geographical center of Florida, Orlando is within easy access by train, plane and trunk highway of all the markets and raw materials of this fast growing state. For statistical data and special information, address Greater Orlando Chamber of Commerce, 152 Chamber of Commerce Building, Orlando, Florida.

OPPORTUNITY CENTER OF  
**FLORIDA**

## Business Briefs

(Continued from page 62)

gust "holiday." Florida, Georgia, Louisiana, Tennessee reported good liquor tax gains; Kentucky and South Carolina fell off. Beer tax collections still high. 6 Virginia moonshine stills raided by Feds.

**CONSTRUCTION.** See article on Southern construction on page 42.

**MINERALS.** Bituminous people have new household burning equipment for domestic market after war, said to be completely smokeless. Postwar housing construction, it is figured, will add another 5,000,000 tons yearly to domestic bituminous needs; 200,000 domestic stokers, 500,000-800,000 hand-fired central units, 1,500,000 stoves may be produced during early post-war period.

Anthracite people also have new, revolutionary principle of hard coal combustion; to be its No. 1 bid for a larger slice of postwar heating business.

*Anthracite for domestic use next winter will be 6 million tons short of full needs, guesses Ickes; shortage is one million tons larger than early estimates. Maximum permissible shipment to retail dealers reduced from 90 to 87½ percent of full requirements (Amendment No. 2 SFAW Regulation No. 18).*

English and Americans make pact obligating both to exercise supervisory control over competitive operations of their

nationals in the international oil business. Oil industry working at record levels with third quarter profits expected to equal second quarter, 34 percent better than a year ago. Consumption of gasoline during first seven months of 1944, 25 percent greater than for the like 1943 period, oil products up 20 percent. Size of drilling units for new oil wells in 79 Texas and Louisiana fields reduced from 40 to 10 acres.

*Mid-August daily average gross crude oil production was 4,667,300 barrels.*

"Big Inch," world's largest pipe line (24-inches, 1,363 miles long) had first operational birthday August 14, in year had delivered 96,292,000 barrels of crude oil from Texas to the East, or 316,120 barrels daily in early August. "Little Big Inch" (20 inches) pumped 180,594 barrels daily. Nearly 14,000 tank cars removed from East coast petroleum service since July, 1943; West coast tank car movements tripled.

*Fuel oil rations withheld from anyone who destroys, sells or gives away without good reason coal or wood burning equipment. Nation's stockpile of essential civilian petroleum products reduced 32 percent since 1941.*

July iron ore production totaled 12,701,439 gross tons, says Bureau of Mines:

a slight increase over June yield. Acute labor shortage charged with production drop; in July, 1944, only 27,400 were employed by iron mining industry, was 33,800 a year before. Shipments from mines exceeding production, iron ore stocks at mines dropped off a million and a half tons during July, amounted to 5,594,439 on August 1.

*Iron and steel scrap stocks approximated 5,991,000 gross tons on July 1, a fractional increase during previous month.*

Total consumption of ferrous materials was 8,889,000 gross tons for June, a slump of 5 percent from May use.

Zinc oxide stocks slightly bigger, been going up since first of year. Slab zinc inventories gained 3 percent at producers' end, lost 4 percent at consumers'. Zinc dust holdings (producers') continued to drop, on June 30th were lower than ever in 1943 or 1944, but production topped any since mid-1943; but output of zinc oxide and slab zinc was less, the latter being lowest since June, 1941.

**FINANCE & TAXATION.** Federal tax revenue for the fiscal year ended last June 30th doubled the year before—\$40.1 billions against \$22.4 billions. House Ways and Means Committee has started fretting over postwar tax plans. Nearly half the July Internal Revenue collections (\$2,620,224,038) were from withholding taxes on salaries; in July, 1943, was only

(Continued on page 72)

**YOUR SHIPMENTS ARE IMPORTANT**

STENCIL ADDRESS YOUR SHIPMENTS with easily read, permanent stenciled markings—they'll roll faster, and costly delays in transit will be eliminated.

DIAGRAPH-BRADLEY manufactures a stencil cutter for every shipper's need. Machines are available for cutting letters  $\frac{1}{2}$ ",  $\frac{3}{4}$ ",  $\frac{1}{8}$ ",  $\frac{1}{4}$ ",  $\frac{1}{2}$ " &  $1\frac{1}{4}$ ". Most government export shipments require stenciling in letter size  $1\frac{1}{2}$ " or larger.

Diagraph-Bradley is the only manufacturer making a stencil machine for cutting letters larger than 1".

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World's Oldest and Largest Manufacturer of Stencil Machines

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DIAGRAPH-BRADLEY CORPORATION  
NO. 31 DIAGRAPH-BRADLEY BUILDING  
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## FLEXIBLE SHAFT and MACHINES

One Hundred Twenty-five Types and Sizes

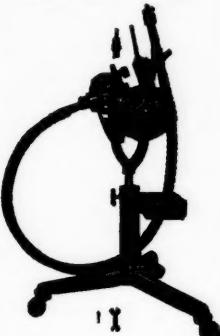
1/8 TO 3 H.P.

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SEND FOR  
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Types—1/8 to 1 1/2 HP.

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Files  
and  
Ground Cutters



Our thirty-ninth year in this  
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The Largest Exclusive Flexible  
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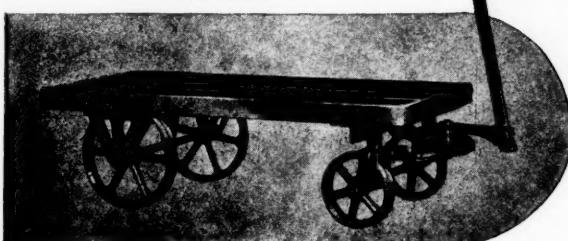
QUALITY MACHINES ONLY

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## THOMAS TRUCK of Keokuk



THOMAS MAKES



4 WHEEL TRUCKS



2 WHEEL TRUCKS



CASTERS



RUBBER WHEELS

## SAFETY WAGON

Heavy Loads, Sharp Turns—No Tipping

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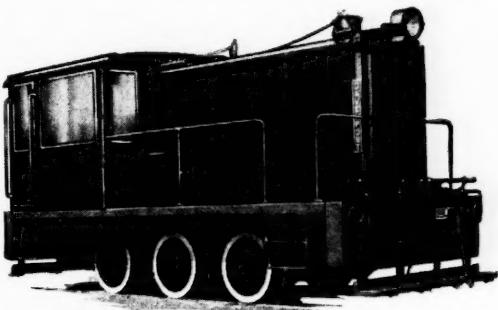
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## From Oil to Coal

(Continued from page 45)

be supplied to it as well as to the oil burners but subsequent operation proved that natural draft provided all that was necessary.

Ignition or lighting off was accomplished by lighting off one of the oil burners and operating it long enough to heat the brickwork sufficiently to maintain ignition for the coal burner.

Control of the coal burner and pulverizer was transferred from the oil burner control which was designed by Hagan Corp. No stack draft control was provided at the time although it had been on order for some time. Operation of pulverizers was not affected by the lack of this control except on very little loads or below 5,000 lbs. steam per hour when with excessive stack draft the burner had a tendency to snuff out or pull the flame away from the burner on quick change of loads.

The installation as shown in Figure 2 indicates both oil and coal

units ready for service. Figure 2 shows boiler feed pumps arranged out of the way on a platform 8' above the boiler floor but in sight of the fireman at all times. On a platform above the pump platform is the deaerating feedwater heater and make-up control receiving all returns from the condensate system and adding make-up as required. The distance from the top of the water in the feedwater heater to the center line of the centrifugal pumps is 15' which gives sufficient head on the suction side of the feedwater pumps to prevent vapor lock in the pump with feedwater at high temperature.

One pump is motor driven and the other turbine driven. These are operated in accordance with the demand for exhaust steam in the heater. Generally, however, the returns are hot enough, in that only a small amount of additional exhaust steam is required.

The feedwater control consists of equipping both pumps with Fisher excess pressure governors and Copes

feedwater regulators installed on each boiler so that minimum labor is required for maintaining the water level in boilers. Figure 3 shows the oil pumps and heaters mounted in the boiler room and near No. 1 boiler.

The winter heating season of 1942-43 indicated the wisdom of maintaining equipment suitable for burning both types of fuels, in fact, during periods of coal strikes, frozen coal, sleet, ice and other problems fuel oil carried the load often, although it was used for a relatively short time.

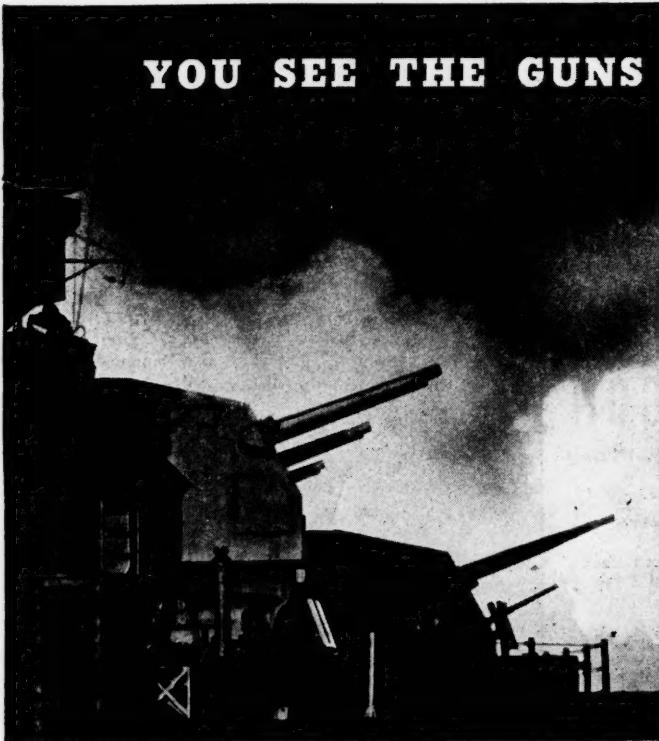
The entire job was handled by the writer through McKenzie Engineering Company, factory representatives of both Peabody Burner Company and Strong-Scott Manufacturing Company.

The brickwork alterations were done by George H. Dashiells and Sons, Baltimore. Pipe work and other installations were handled by McKenzie forces.

The entire job was completed in about eight weeks after material arrived. The operation of this job is

(Continued on page 68)

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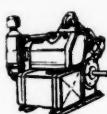
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## Post-war Industrial Construction

(Continued from page 47)

exerted by the law of great competition.

This flexibility will be obtained by various means and the means will differ according to the type of product to be manufactured. A one-story straight-line production layout may serve one industry and not another. A structural steel building may serve one industry admirably and with great economy, while a concrete building may serve another industry much better.

Certainly good relations between capital and labor will receive added emphasis in the postwar period. A good start has been made and continuing improvement may be expected. Labor will demand and will

receive a fair share of the value of the products it helps build. Industrialists know that good labor relations pay dividends. They pay dividends in continued efficient production and in reduction of costly labor stoppages. Since Henry Ford established the basic \$5-a-day rate thirty years ago, economists have realized more and more the largest single market for the products of industry is labor itself.

The effect of a modern production layout on good labor relations is obvious. It is a fact that, because of health and safety precautions, and proper attention to lighting, heating and ventilation, many industrial employees "live" better at work than at home.

### From Oil to Coal

(Continued from page 66)

dicates that while it was satisfactory for the emergency in view and operated very well in moderate boiler ratings, larger furnaces with

higher settings would have been helpful in many ways. Two years' operations, however, indicated that other than slight slagging of the brickwork at the points where the three burners came together and an accumulation of fly ash toward the

end of the week on the end of the horizontal baffle, the unit worked very well.

This article is not to be construed as advocating or recommending the installation of such units under boilers set as low as indicated here nor with the baffle arrangements shown. However, the writer, being the officer responsible for providing heat, found it necessary to secure quick relief in some manner by providing an additional type of fuel.

### U. S. Manual Available

The summer 1944 edition of the *United States Government Manual*, the official handbook of the Federal Government, will be available for distribution after September 21, the Office of War Information has announced. The print order on the manual is being limited because of the paper shortage, and individuals and firms that use the manual are asked to place their orders in advance of the publication date so that their requirements may be covered. The manual can be ordered at a cost of \$1 a copy from the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Large business organizations may obtain a discount of 25 per cent on orders of 100 or more copies that are delivered to one address.

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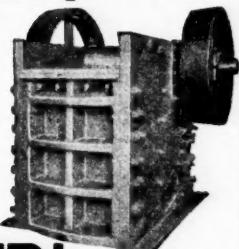
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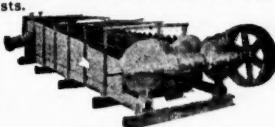
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## Southern Research Institute

(Continued from page 39)

cost factor to a minimum and thus promote the welfare of manufacturers in the field concerned, without respect to size. Moreover, problems may be studied that require more time and expense than should be borne by a single manufacturer or company, in view of the wider application of the results. The correlation of research effort, such as is done in fellowships supported by

associations, prevents unnecessary duplication in scientific inquiries.

In general it should be said that research for account of associations should have for its purpose the advancement of basic knowledge of the industries, their processes and products.

### Fundamental Research

Although applied research is its primary function, investigations in the field of pure research will have

an important part in the Institute's program. Fundamental research will be conducted in behalf of clients on the fellowship basis, and also, when funds permit it, by the Institute on its own initiative.

Likewise, research leading to the more profitable use of southern raw materials is one of the leading purposes of the Institute, and will, as funds permit, be a continual function. The cardinal purpose of furthering the economic development of the South will remain always uppermost among the Institute's responsibilities.

## Seaboard Radio Test

(Continued from page 41)

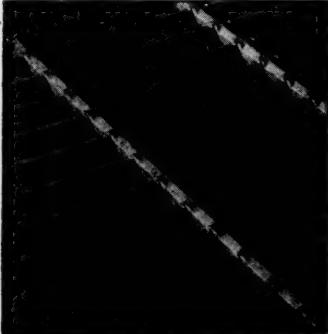
as he does by ordinary telephone today.

Any widespread utilization of radio on railroads must await the permanent assignment by the Federal Communications Commission of suitable frequencies, as well as the time when materials and manpower will be available for the manufacture of radio equipment. The Commission is at present studying the question of the possible use of radio by railroads and a decision will probably be reached by that body in the not too distant future.

Should further tests and study lead to the conclusion that radio communication is practicable and conducive to greater efficiency in railroad operations, one can foresee a great demand for such radio equipment.

Coupled with the other large markets which radio manufacturers anticipate in the postwar era, new plants may be needed to satisfy the demand. With its abundance of skilled workers, and other inherent advantages, the South should claim its proper share of such new manufacturing facilities.

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Production was 7 percent higher than in 1943, but it was somewhat less than the 1,778,269 tons recorded in the first six months of 1942. Notwithstanding the production increase stock piles were reduced by 293,827 tons, about 7 percent of the stocks on hand at the beginning of the year.

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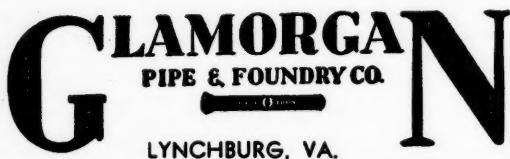
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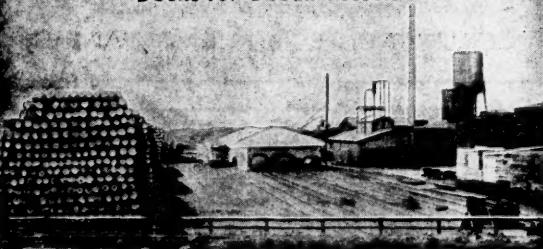
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## Business Briefs

(Continued from page 64)

\$332,781,564.

Rationing hurts in other ways: Gasoline taxes dropped from \$26,365,208 in July, 1943, to \$22,213,652 during last July, and automobile use taxes similarly sank from \$104,291,673 to \$98,848,440.

Corporations got poorer as July, 1944, income taxes were only \$114,355,531, in July, 1943, were \$161,249,795. July liquor taxes went up nearly 60 percent over those of last year; cigarette taxes dropped around 12 percent.

U. S. Treasury (August 24, 1944) reported the total gross public debt and guaranteed obligations as \$210,967,736,151, last year was \$147,603,020,281; also somehow reported a net balance of \$18,734,385,197. Many informed voices crying for tax revision and government guarantees of loans to business in post-war struggle.

**TRANSPORTATION.** Even though rates are set by ICC, 47 railroads were sued under the Sherman Act by the Justice Department, alleging conspiracy to restrain and monopolize trade in the transportation of freight and passengers in the West.

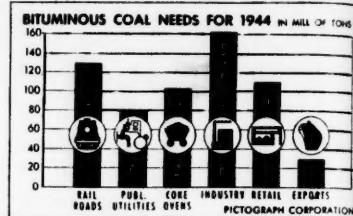
*Freight traffic on Class 1 railroads in July was around 63,750,000,000 ton-miles, a trifle better than July, 1943; compari-*

*son: same railroads in first seven months of 1944 handled 4.6 percent more revenue ton-miles than in corresponding 1943 period.*

War Department says that within the last few months 52,000 light trucks have been returned into the civilian economy. On House calendar is still the post-war highway authorization bill (H.R. 4915), was unanimously reported by House Committee on Roads; would authorize \$500 millions for federal aid highway construction for each of 3 successive years.

**POWER.** Peak electric power requirements (38,524,043 k.w.'s) expected in December. Generating capacity, Class 1 systems, by end of year will total 45,908,848 k.w.'s, 7,384,805 above needs. Heaviest demands on principal utility systems of U. S. for last July added up to 35,898,274 k.w.'s, 55,000 over June and 4.8 percent over July, 1943. July energy requirements up 1.5 percent over same period last year.

*Plant Eaton, Mississippi's new generating station, due for completion next February, will be husky enough to produce 175,000,000 k.w.-hours annually, more than total generated in state last year.*



Electric output of Southern states up 7.1 percent (week of August 12-19) over preceding week; national output for the week was 4,451,076,000 k.w.-hours; only West Coast had greater percentage gain, Rocky Mountain and Mid-Atlantic areas declining.

Larger privately-owned U. S. electric utilities had operating revenues in June of \$254,096,000, 5.3 percent over same month last year. Operating revenue deductions in June, including operating expenses, depreciation and taxes, were \$198,684,000, 6.8 per cent above June, 1943. Net income in June was \$41,364,000, up 4.7 percent from June last year.

*Compared to June, 1943, revenues from industrial services were up 5.3 percent; from residential service 3.8 percent, from commercial service 6 percent.*

Operating costs in June were 7.8 percent over last year, depreciation charges 0.8 percent lower and taxes on electric operations 7.3 percent greater.

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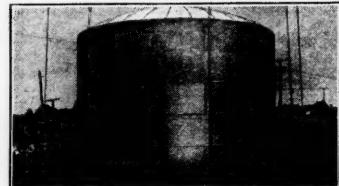
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**Structural Frame  
For  
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Port St. Joe, Fla.**

**BETTER  
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AT  
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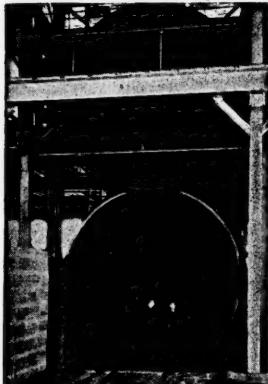
**THE AETNA STEEL CONSTRUCTION CO.  
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**STRUCTURAL STEEL for BUILDINGS and BRIDGES**

Capacity 1000 Tons per Month. 3000 Tons in Stock

Carolina Steel and Iron Company  
*The Largest Steel Fabricators in the Carolinas*  
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**TANKS**



15'3" O.D. x 40' Long Vulcanized

ELEVATED TANKS — PRESSURE TANKS — STEEL STORAGE TANKS — PROCESS TANKS — BUTANE-PROPANE TANKS — STANDPIPES — RETORTS — BINS — EXTRACTORS — BARGES — DREDGE PIPE AND ACCESSORIES — WELDED PIPE — RIVETED PIPE

General Steel Plate Construction  
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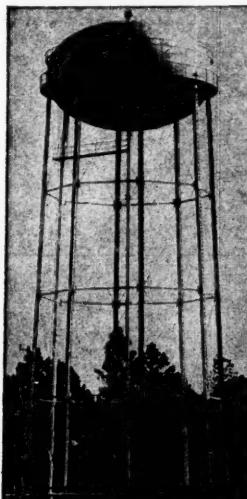
**POWER PLANTS --- WATER WORKS**

**Contractors**

**BURFORD, HALL & SMITH**  
140 Edgewood Ave., N. E.  
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**Tank Builders For Over 80 Years!**

**Another Recent Cole Installation —  
A 200,000 Galloner!**



This ovaloid tank of 200,000 gallons was built and installed by us for the city of Port St. Joe, Fla., the site of the new \$6,800,000 paper mill.

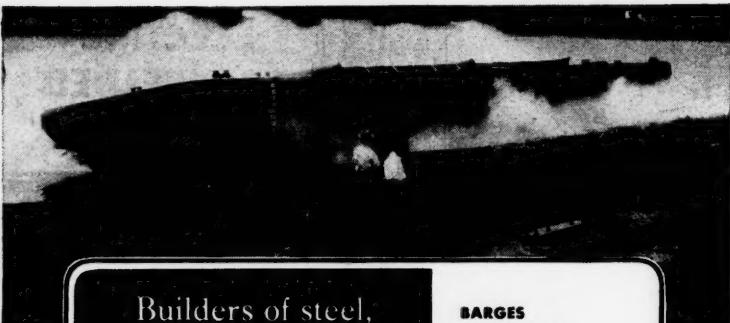
Numerous cities and towns are being served by Cole Tanks including Charlotte, N. C. (million gallon tank); Mobile, Ala.; Gastonia, N. C. (million gallon); Spartanburg, S. C. (million and a half gallon); McPherson, Kan.; St. Petersburg, Fla.; Danville, Ky.; Daytona Beach, Fla.; Gainesville, Ga., etc.

In addition to water tanks and towers, we also build tanks for acid, dye, fuel, oil, creosote, chemicals, etc., as well as other fabricated products of steel and alloy.

WHITE FOR "TANK TALK" NO. 28-D.

**R. D. COLE MANUFACTURING CO.**  
ESTABLISHED 1854  
**NEWNAN GEORGIA**

All-welded sand barge of two sand compartments



Builders of steel,  
all-welded and riveted  
floating equipment  
for rivers and  
harbors.

BARGES  
CAR FLOATS  
PONTOONS  
DERRICK HULLS  
DREDGE AND  
TOWBOAT HULLS  
STEEL DRY DOCKS  
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LOCKS

Ways at Ambridge, Pa., and Trenton, N. J.

### AMERICAN BRIDGE COMPANY

General Offices: Frick Building, Pittsburgh, Pa.

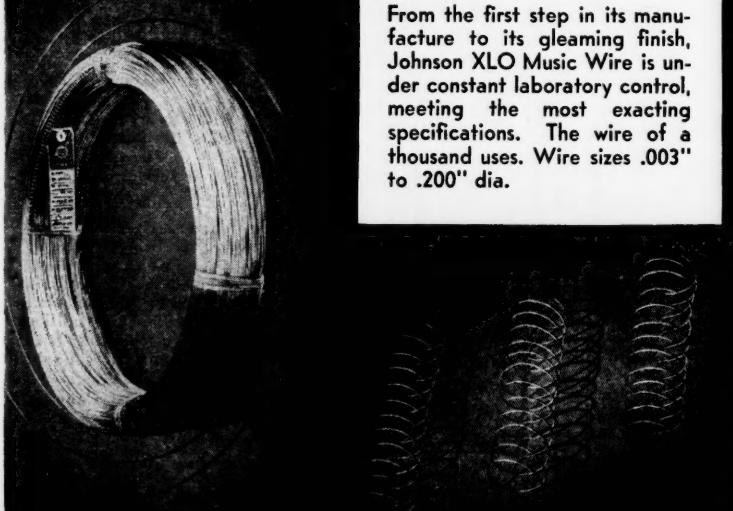
Offices in New York, Philadelphia, Chicago and other principal cities  
Columbia Steel Company, San Francisco, Pacific Coast Distributors  
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UNITED STATES STEEL

## JOHNSON XLO *MUSIC WIRE*

From the first step in its manufacture to its gleaming finish, Johnson XLO Music Wire is under constant laboratory control, meeting the most exacting specifications. The wire of a thousand uses. Wire sizes .003" to .200" dia.



### JOHNSON STEEL & WIRE CO., INC.

WORCESTER I., MASSACHUSETTS

NEW YORK ATLANTA AKRON CHICAGO LOS ANGELES

### KINGAN DEDICATES PLANT

(Continued from page 56)

the dock at the front of the plant.

The main building is 60.9 feet by 105 feet and is constructed of concrete block. A runway, 6 feet wide and 190 feet long, runs along the south side of the building into the killing room in the plant proper. This room is 29 feet by 28 feet.

The facilities include a chilling room, cooler, tank house and tripe room. A boiler room adjoins the plant on the north. There is also an office building which boasts a lunch room and many other accommodations for employees.

Kingan & Company, which will mark its one hundredth birthday as a meat packing concern next year, is one of the ten largest packing plants in America according to the value of sales.

### Ships of the South

Victory Fleet Day, September 27, will be the third anniversary of the birth of our wartime merchant fleet. The day will be dedicated to the shipping companies of the United States that have maintained the global lifeline of a nation at war.

On September 27, 1941 the first of the Liberty ships, the Patrick Henry, was launched in a southern yard, Bethlehem-Fairfield at Baltimore, Md., the forerunner of hundreds of seagoing vessels built in the 28 shipyards of the South.

Since the Patrick Henry slid down the ways, more than 3,700 vessels — Liberty ships, tankers, standard C-type cargo carriers and other ships — under the control of the War Shipping Administration have been launched.

Southern yards have built 1,475 of these vessels with a total deadweight tonnage of 15,167,632. Shipbuilding contracts in the South have passed the \$4,000,000,000 mark, with over \$300,000,000 expended for the construction of shipyards alone. It is natural that most of these yards are located on the long coast line extending from Baltimore to the Texas-Mexican border, however, some of them are on the extensive inland waterways of the South.

Many steel fabricating plants in southern states are making box-like sections of sea-going vessels of various types and sizes. These sections are then shipped by rail to the waterside for assembly and launching.

September is deservedly a double anniversary, marking the birth of the nation's overall war-time merchant shipbuilding program and the revival of an industry that promises much for the industrial future of the South.

### Equal Pay Laws

Statutes designed to prohibit wage discrimination against women have gone into effect in two more states—New York and Illinois. Montana and Michigan passed such laws in 1919, and Washington in 1943.

MANUFACTURERS RECORD FOR